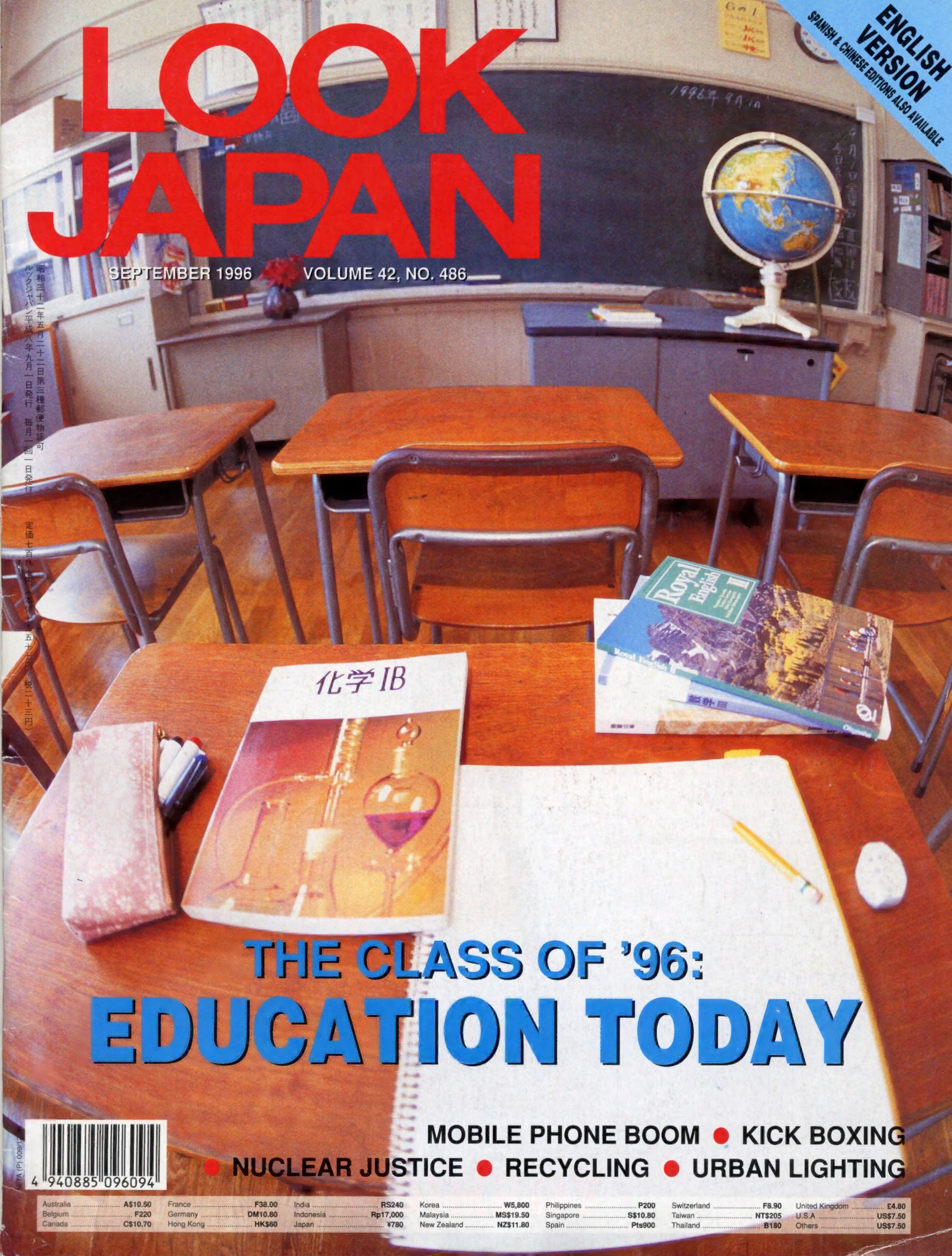

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THE CLASS OF '96:
EDUCATION TODAY

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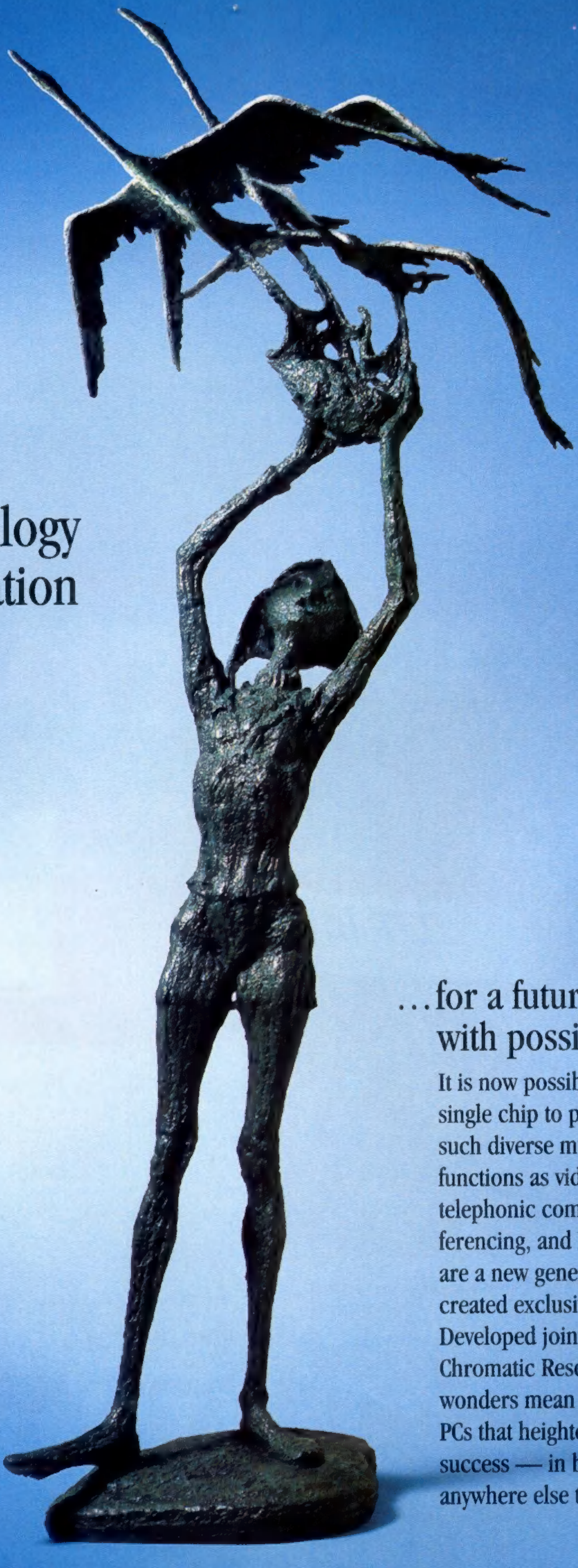

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The much-criticized Japanese education system is beginning to change, with educators de-emphasizing the uniform—rote learning and examinations—and focusing on the diverse-expanded curricula and more freedom for students.

(COVER PHOTO WITH COOPERATION OF TAIMEI ELEMENTARY SCHOOL, GINZA, TOKYO)

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"TOKYO TOWER" BY YŌICHI YAMAZAKI, COURTESY OF MOTOKO ISHII LIGHTING DESIGN

IN PRAISE OF LIGHT

It was no easy task for Motoko Ishii to persuade Japan's city fathers that buildings look better in the dark if they are illuminated.

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KYOTO ON THE VISTULA

The Center for Japanese Art and Technology in Krakow, Poland, and the outstanding collection of Japanese art that it houses, pay tribute not only to the strong ties between two nations but to the universal love of beauty.

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© FUJIO • PRODUCTION

THE MANGA SAMPLER

The characters in iconoclast Fujio Akatsuka's gag manga added their own freewheeling, anarchistic twist to the Japan of the 1960s.

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ALIVE AND KICKING

After seeing its base of local fans and fighters dwindle over the past two decades, kick boxing is making a comeback in Japan.

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IN THE HOOD

Konnichi wa, Yakult desu! "Good afternoon, Yakult here!" Just as the glad twitterings of the Japanese nightingale herald the arrival of spring, so for millions of office workers across Japan this cheerful salutation heralds the arrival of lunch. For at lunchtime, 57,000 uniformly clad Yakult *obasan* (ladies) disembark from elevators to unload on us the company's ice-chilled yogurt smorgasbord—plain yogurts, raspberry yogurts, little one-suck lactic vitamin yogurts, Joie yogurt drinks, and (wince) odd-tasting health potions. Yakult obasan are a Japanese institution that is now flourishing in eight countries, including such far-flung fermented-milk meccas as Mexico and Singapore. Get your loose change ready—one could be heading your way even now. Just don't block her trolley. **AH**

EIICHIRŌ IWASA

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LETTER TO THE EDITOR

Cool Head

In "A Call for Cooler Heads" (LJ July 1996), the author [Kumao Kaneko, president of the Council on Nuclear Disarmament and Non-Proliferation] expresses his firm support for Japan's continuing development of fast breeder reactors. I admire his stand.

As a participant in the 1993 Scientist Exchange Program of Japan's Science and Technology Agency, when I was based at the PNC [Power Reactor and Nuclear Fuel Development Corporation] plant in Tokai, Ibaraki Prefecture, I have firsthand experience of the sincerity of Japanese nuclear technology experts in their efforts to develop reactors that are safe and to train competent operators. Without this commitment, power-down operations at Monju following the accident of December 8 last year could not have begun within 17 minutes of the first alarm sounding, or shut-down operations have been completed with "no effects of radiation to workers, residents, and the surrounding environment."

The success of Japan's Monju technology is not just for Japanese to reap, but also for countries around the world that believe in the peaceful use of nuclear energy. As for how safe it is, nobody can tell. What matters most is that the benefits outweigh the risks.

Nieva S. Otadoy-Lingatong
Radiation Health Service,
Department of Health,
the Philippines

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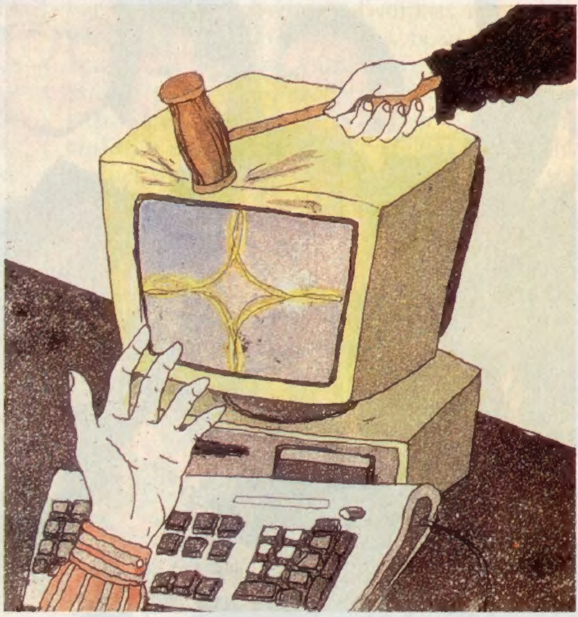
THE GAVEL AND THE NET

Can current law adequately protect both free speech and public standards for citizens of the Internet?

BY **KATSUYA UGA**

THE Internet will no doubt contribute greatly to the establishment of a global information society and, in so doing, it will make our lives more convenient in a variety of ways. However, the Internet will also contribute to and create numerous problems in this emerging society. These problems include the use of the network to slander, to distribute pornography, and to provide information that can be used for criminal purposes.

Of these acts, those that fall within the structure of existing criminal law—such as slander and obscenity—can theoretically be prosecuted after the fact. For example, if the author of a slanderous remark can be identified, he or she can be held liable for damages. However, there is some question as to whether victims of crimes committed on the Net can in practice find redress. Defamatory remarks posted on the Internet's electronic bulletin boards, for example, are often contributed anonymously, making it nearly impossible for the victim to identify the perpetrator.


ATSUSHI USHIO

The responsibility borne by on-line services and system operators (sysops) then becomes an issue. Should they comply if the victim requests the name and e-mail address of the person who posted the slanderous statement? What should they do if the victim demands that the statement be deleted from the bulletin board? Alternatively, should they continually monitor postings and take the initiative in deleting anything that may be illegal or inappropriate?

All of these questions relate to the issues of freedom of expression and communications privacy, which are protected by the constitution in Japan, as they are in many other democratic nations. As such, they require careful consideration with the following points kept in mind.

First, there is a limit to how far Japan can go toward solving these problems if the country relies only on the two existing bodies of law that can be applied to this new medium: communications and broadcasting law. The concept of communications privacy, for example, is based on the assumption that the communicated message is intended for one or more specified recipients. Inasmuch as bulletin boards on the Internet can be freely accessed by any subscriber to a given on-line service, it may be imprudent to afford communications privacy the same protection on the Net that it receives with other media. New legal definitions are required, such as the category "public-oriented telecommunications," which has been proposed by the Ad Hoc Committee on the Fusion of Communications and Broadcasting, established in 1994 by the Ministry of Posts and Telecommunications.

Second, since it is undesirable for public authority to impose restrictions on freedom of expression, democratic nations should first explore the viability of regulatory systems that can be controlled by private parties. In the case of electronic bulletin boards, for example, the following points should be stated in the contractual agreement between on-line services and their subscribers: 1) no one has the freedom to post anonymous messages; 2) if complaints are received about a given message, the complainant can be given the name and e-mail address of the message sender; and 3) the on-line service or sysop has the power to delete messages. An impartial third-party organization could be established to ensure that the decisions of the on-line service and sysop are fair.

Third, Japan and other nations must encourage on-line services and sysops to take responsibility for the medium. If on-line services use contracts that clearly state they will monitor the content being transmitted over their systems and quickly delete anything that goes against public standards, it is easier to hold them responsible in both criminal and civil cases. If, on the other hand, they adopt contracts that state they will not be involved with content in any way, it is difficult to hold them legally responsible when a problem arises.

By adopting the first type of contract, providers and sysops will earn the public's trust, which will help them attract more subscribers. This being so, it seems reasonable that they be expected to accept the risks involved when that trust is betrayed. In fact, however, the majority of on-line services and sysops are likely to select the second type of contract out of fear that the risks associated with the first type are too high.

As one solution to this problem, legal provisions could be made so that on-line services and sysops are liable for damages only in cases of intentional negligence. Alternatively, the on-line services and sysops might be legally prohibited from selecting the second type of contract. In either case, they would be required to check messages and images and to delete any that violate public standards.

Since the Internet will continue to exert an ever greater influence on our lives, it is not enough simply to adhere to the principle of free speech; democratic nations must find a way to balance freedom of expression with the legitimate concerns of the public. Moreover, given that the Internet transcends national borders, any effective legal solution will have to be the product of international cooperation, not domestic legislation alone.

The author is a professor in the Faculty of Law at the University of Tokyo. He has also been a visiting scholar at Harvard Law School and at the University of California, Berkeley.

MORE TO SMILE ABOUT: *Thanks to educational reforms now underway, students have greater choice and more free time, and are under less pressure to make the grade.*

THE CLASS OF '96: EDUCATION TODAY

The much-criticized Japanese education system is beginning to change, with educators de-emphasizing the uniform — rote learning and examinations— and focusing on the diverse — expanded curricula and more freedom for students.

BY **SHIN'ICHI KATSUKATA**

THE bell rings at the Ina Comprehensive High School in Ina, Saitama Prefecture, and students swarm out into the broad hallways for the between-class break. "It's like being on a rush hour train!" one youngster is overheard to say. Groups of gabbing friends form. The halls fill with laughter. Shortly, students from one class wave good-bye before making their separate ways to different rooms, ready for the next hour of instruction.

A familiar sight? Not in this country. The usual practice in Japan is for the school to divide students into *kumi* (groups) that remain together for one year, each with its own assigned room. Rather than having the students go to the teachers, the teachers come to each group's classroom. But Ina is different. It lets the students choose which subjects they will study and when.

The range of subjects offered at Ina is impressive. One of the girls I spoke with was studying French in addition to English (the required second-language class). She tells me she also likes the Outdoor Observation course, because it gets her out of the school building for a while. She explains, "I want to go to a university where I can study foreign languages. That's why I'm taking French. The Outdoor Observation class has nothing to do with entrance exams. I'm just taking it because I want to." The Ina history department offers students a range of subjects that spans the gamut from ancient to modern world history.

Ina Comprehensive High School, with its wide course options and its philosophy of treating students like adults, is a product of debates that were held on "the high school of the future" among education committees in the greater Tokyo area. Ina opened its doors twelve years ago, and operates on a mammoth scale. The campus is as large as the average junior college, and it serves about 3,100 students. The large scale is a necessity, administrators explain, for the school to offer the breadth of subjects that it does.

The Ujiie High School in Ujiie, Tochigi Prefecture, requires its first year students to take an "Industrial Society and Humanity" course in order to get them thinking about their place in the world and about their futures.

From their second year, they are allowed to choose their own course of subjects and schedules. Like Ina, Ujiie High School is one of the new "comprehensive" high schools authorized by the Ministry of Education in 1994. There are currently 45 such schools across Japan.

Comprehensive high schools follow the example of Ina, and are neither "ordinary" nor "vocational" schools. While students are free to choose their own courses and plan their own schedules, the school encourages them to clearly define their goals for the future. Otherwise, teachers worry, there will be some students who tend to coast through, earning their credits by taking courses that require little study. Ujiie High School divides its courses into six departments: Humanities and Languages, Natural Science, Arts, Physical Education and Health, Living and Culture, and Information Sciences. The Information Sciences Department, for example, offers basic instruction in bookkeeping, English, and data processing, as well as more advanced study in information management and computer programming.

I talked to a third-year (equivalent to U.S. senior) girl who is in the Natural Science Department and wants to become a nurse. "I'm going to take the entrance exams for nursing programs at both the university and technical college levels," she said. "My goal is to become a nurse, and I think I'll be able to do that even if I flunk the college exams." Note the fact that she has clear, personal goals. She is not content just to "go to college like everybody else."

OUT OF UNIFORM

The perceived rigidity of the Japanese education system is a topic that is almost certain to come up whenever people begin discussing Japanese society and what is wrong with it. And perhaps it should; certainly there is some substance to the criticisms. But uniform education is not all bad. Japan's mandatory education is constantly ranked at or near the top in international comparisons, especially for mathematics and computer skills. Another measure of its success is that illiteracy rates are very low (.1%). And while there may be problems with bullying and other antisocial behavior, Japanese schools have nowhere near the levels of violence as those in the U.S. Uniform education has no doubt played a large part in ensuring social equity and stability.

If uniform education is not altogether bad, the reasons for its adoption were not altogether simple, either. Sociologists and historians have analyzed the evolution of the system from a number of different perspectives—cultural, corporate, social, academic—and arrived at the following explanation.

First, since the Meiji period (1868–1912), the goal of Japanese education has been to catch up with and surpass the West. The emphasis has thus been on acquiring Western knowledge. Rote learning was considered the most expedient way to accomplish this; children repeated in unison what the teacher wrote on the blackboard.

STAND AND DELIVER: *Today's teachers must be sensitive not only to the new educational values—"ambition, interest, cognitive ability, and imagination"—but to the changing values of their students.*

THE CLASSIC IMAGE: *Just another day in* juken jigoku *(examination hell). Students sit for the high school entrance exam.*

MAINICHI SHIMBUN

Second, the Japanese have long placed a great deal of value on egalitarian, family-centered cooperation and on a certain degree of order and constraint. This not only fostered an aversion to excessive competition, it also resulted in an emphasis on homogeneity and a "me-too" mind-set that does not adequately take into consideration the differences between people. Education has adapted to these indigenous traits.

Third, during the period of sharp economic growth (from the mid-1950s to the end of the 1980s) Japanese companies were looking for people who would fit in with their corporate cultures and learn their skills and methods. Creativity and imagination were not necessarily required. Uniform education helped to produce the homogenous labor force big business sought.

Fourth, the emergence of an industrial society in the Meiji period undermined both agricultural and cottage industries, which became increasingly impracticable. The accepted course of life was seen to be attending a big-name university and going on to be a salaryman at a large company or government agency. Education was therefore designed to give one the edge in the fight for positions at prestigious schools. Society was not yet so rich that it could afford individuals the opportunity to seek their own destinies.

Fifth, as entrance exams subsequently came to the forefront in education, parents gradually became less involved in teaching their children. Industrial society undermined local communities, stripping homes and extended families of their ability to educate, thereby giving schools a monopoly over learning.

But even if it has not been an entirely unsuccessful system, the uniform education that has underpinned Japanese society for so long is in the process of changing. Education is an issue that hits so close to home that almost everyone tends to discuss it in terms of their own narrow experience. But for all the potential confusion this breeds, few would deny that uniform education is giving way to greater diversity. In fact, the quest for diversity is now a bold, unapologetic trend with far-ranging implications.

"STANDARD DEVIATION" FROM STATUS

Roughly twelve years ago, a Japanese medical school was in the news for administering an aptitude test to prospective students. Modeled on an examination used by an American medical school, the test attempted to gauge whether candidates had the qualities necessary to become doctors and what their motivations and ambitions were for wanting to do so. For instance, it measured how fast and accurate they were at reaching decisions and asked them to describe why they had chosen medicine. More than the results of the test themselves, what is noteworthy is the sense of peril the school felt at the sight of so many students who were neither fit nor motivated to become doctors, but were nonetheless testing for seats in the medical program.

Why had they chosen medicine if they were unfit for the profession and did not want to practice it anyway? Because admittance to medical school was seen as the ultimate proof of one's own excellence. The "standard deviation," a statistical measure of an individual's performance on an exam relative to that of his peers, was the accepted means of ranking applicants, and the med school attracted those at the top of the scale. The sheer status of testing for a medical school attracted students who had no business trying to get in.

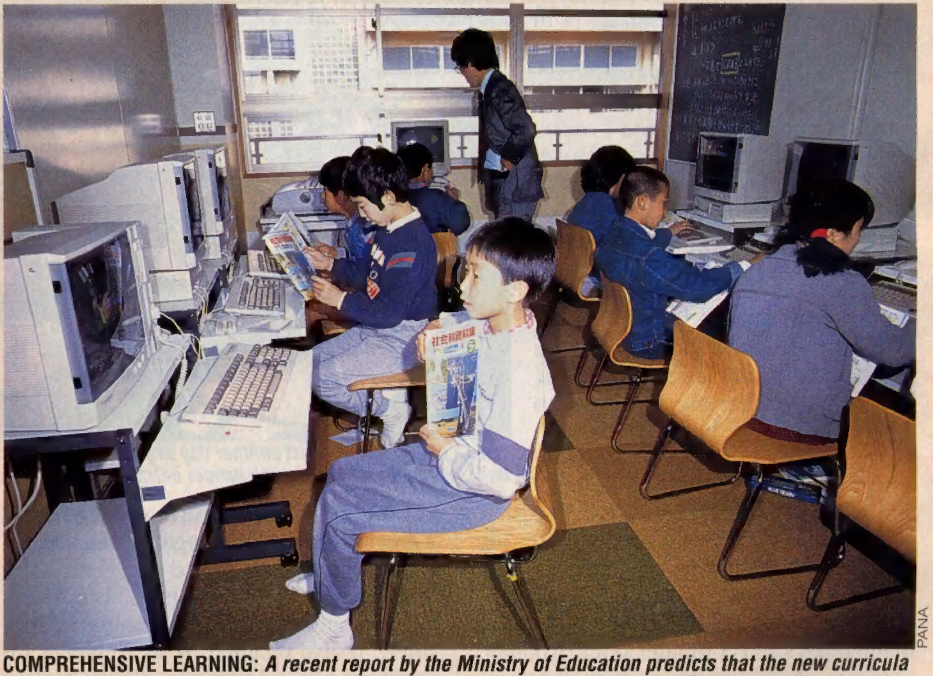
"Today," the head of a college prep school tells me, "slight differences in standard-deviation points don't matter so much. People aren't as interested in where you studied as in what you studied." A more concrete manifestation of the change can be seen in any bookstore, where the college guides are now laid out according to fields of study. They contain an explanation of what one can expect to learn and do in that field and a list of the universities where it can be studied. Many guidebooks use stars to rank universities and departments according to the quality of their curricula.

This idea of deciding what you want to study and then choosing the university or department where you want to study it is in sharp contrast to past practice. It used to be that guidebooks were laid out according to the standard-deviation ranking of the student body at a given university or department.

The changes are most obvious in the tests administered by prestigious private universities. In the past, students would test for several different departments at once: business, law, political science, economics, literature. Today, they are more likely to narrow their choices. In fact, a decline in applications is one of the major problems besetting private universities, partly because the eighteen-year-old population is itself in decline and partly because students are choosing their majors with greater care.

In short, where standard-deviation scores used to be the sole criterion by which a candidate's value was judged, today's institutes of higher learning take personal interest and fulfillment more into account.

FIELDWORK: ***Interaction with the local community and with the environment is becoming an increasingly impor***



PANA

COMPREHENSIVE LEARNING: ***A recent report by the Ministry of Education predicts that the new curricula will include such subjects as information science and international understanding.***

IMAGINATIVE NEW VALUES

Why the change? First and foremost is the fact that almost everybody recognizes that the rote-learning system has reached its limits. The new educational values emphasize ambition, interest, cognitive ability, and imagination. Instead of everyone learning together, more individualized methods like team teaching and computer-aided instruction are being adopted.

Second, the negative aspects of too much egalitarianism, homogeneity, and "me-too" thinking have become readily apparent. More value is being placed on lifestyles rooted in the individual. In fact, today's young people have become so self-oriented that it has given rise to such neologisms as *otaku* (roughly the equivalent of "nerd" in English, but rooted in a word that means "you" or "your house") and "me-ism." With nearly 95% of the population going on to high school, and university education readily available to the masses, education is having to adapt to the different interests and abilities of students.

PANA

ant facet of elementary and junior high school education.

KATSUMI YOSHIDA

OPEN UNIVERSITY: ***Students of all nationalities and ages attend this English-language course at a private university in Tokyo.***

Third, the rupture of the economic "bubble" and the industrial hollowing out produced by the steady outflow of manufacturing jobs to Asia have made people who are able to create more important to companies than people who can be easily molded. Moreover, big business has realized that corporate training programs have their limits, and it expects schools to pick up the slack.

Fourth, Japanese wage and hiring practices are coming under fire, particularly the traditions of placing inordinate emphasis on an applicant's alma mater, hiring new graduates only once a year, basing wages entirely on seniority, and guaranteeing employment for life. Adult education programs are now seen as important tools for boosting one's career. Young people are becoming more individualistic in their career choices too, preferring specialized work to management positions.

Finally, people are realizing their children's lives are too centered around school. In due course, all Japanese schools will be giving children at least two Saturdays a month off. (As of April 1995, all public schools allow their students two free Saturdays a month, but just 80% of private elementary schools, 50% of private junior high schools, and 69% of private senior high schools offer the same.) Partially in response to this, education is also expected to be more rigorous. Efforts are being made to revive the educational roles of families and communities so that children have places to learn the things that schools cannot teach them.

NO DARK SARCASM

This is not to imply that Japanese society has passively accepted these changes. After World War II, there was a long-running battle between the Ministry of Education and the Japanese Teachers Union over how education should be administered. The Ministry insisted on uniformity and central control. The union resisted, placing itself on the side of freedom and diversity. There were ideological differences between the two bodies but they have now, after all these years, come to agree on diversity as a goal. Some of the teachers who have long championed diversity as a lofty educational ideal are somewhat chagrined by how the change has been brought about. There are those who claim that the only reason the government has warmed to diversity is that business wanted it, and they worry what will happen the next time corporate demands shift. But most educators chide the critics for not being more positive about the changes that are taking place in the way society works.

It was out of these changes that the comprehensive schools, with their willingness to let students choose their own courses rather than having them decided by the school, came about. Along with them are other high schools that appeal to more specialized interests such as international relations, environmental science, information science, the arts, and tourism.

The Gokase Junior and Senior High School in Gokase, Miyazaki Prefecture, is the only full boarding school in Japan for both junior and senior high students. It opened three years ago as part of the Forespia Program to provide new stimulus to the remote area of Miyazaki where Gokase is located. "Forespia" is a Japlish neologism coined from "forest" and "utopia." Among the courses offered by the school are basic studies in regional history, forestry culture, astronomical observation, straw sandal crafting (taught by local residents), forest observation on mountain bikes, local fossil studies, and a host of others designed to encourage students to explore their natural environment.

PANA

SALAD DAYS: ***Junior high school boys take advantage of their school's broadening curriculum choices.***

The Metropolitan International High School in Meguro Ward, Tokyo, which opened in 1989, was the first of several high schools around the country to offer internationally oriented studies in response to proposals made in 1987 by the government's Ad Hoc Education Council. Public high schools across the country all administer the same entrance exam, but each school is allowed to weigh a student's score according to its own educational emphases. But the Metropolitan International High School has taken it a step further by gaining permission to write its own English-language questions. Moreover, the school has places set aside for three different categories of students: ordinary Japanese students, Japanese nationals returning from abroad, and non-Japanese students. Classes are mixed.

Steps have been taken to break up the practice of ranking high schools pyramid-style according to the grades of their students, and some junior high schools are also experimenting with electives. Three years ago the Ministry of Education banned junior high teachers across the country from using students' scores on tests administered by *juku* (cram schools) in advising the students on their matriculation prospects at a given high school. Teachers had been using the scores to usurp the decision on which schools their students would sit for, ostensibly to make sure that no one failed all their tests and ended up with no place to go. Were the practice not halted, the ministry argued, it would impede diversification. Needless to say, this "diversification from on-high" provoked grumbles and rebuttals from educators, but they failed to make a convincing case as to why the practice should not be halted.

HANEGI PLAY PARK

NOT JUST CHILD'S PLAY: *In the future, students will turn increasingly to the innate wisdom of family and community. (A volunteer teaches children how to make* taketombo*, a traditional wooden toy.)*

Universities are also loosening up what used to be tightly structured curricula as an era of free competition gets underway. It is hoped that these self-reform efforts at the college level will give further impetus to diversity. In many cases, institutions of higher education are de-emphasizing general education in favor of more specialized courses. Some are also giving more weight to their graduate programs. In fact, there seem to be three types of schools emerging: research universities, in which it is assumed that students will go on to do graduate studies; practical universities, which offer certifications and course work that will be of use in the workplace; and lifelong-education universities, which are open to businesspeople.

Though these efforts to diversify are encouraging, they are not entirely new, even in Japan. Many of the ideas behind them have been around since the end of World War II but could not be put into practice because the times would not allow it.

Comprehensive high schools are a good example. The new high school system that was introduced after World War II under American supervision was modeled on the traditional U.S. high school approach and aimed to guarantee that students would be able to elect their course work. Laudable as this idea was, it was neither efficient nor well suited to a country that had to put economic reconstruction above all else. Instead, schools ended up using test scores to assign children to one of four tracks: standard, business, industrial, or agricultural. Now, fifty years later, Japan is finally in a position to realize the comprehensive high school ideal.

Ministry of Education officials and school administrators bristle at the idea of simple comparisons to U.S. high schools, however. They think they have something better to offer. Says one: "American high schools justly come under criticism for offering too many 'easy' classes. Japanese comprehensive high schools foster real academic ability. Students are allowed to choose a carefully planned course of study and they have clear goals to work towards." Diversification, Japanese style.

A DIFFERENT CLASS

The hottest topic in Japanese education today is the report published in June by the Ministry of Education's Central Education Council. The report is meant to provide recommendations on how education should be structured going into the 21st century and will be at the core of future educational policy. On the problem of bullying, it advocates education that "gives children the power to live" and calls for more "space" to be returned to their lives. In practice, that means closing schools every Saturday instead of just two Saturdays a month, with corresponding reductions in classroom hours and course content. Given the time to enjoy life and the community outside of school, children may come to learn more quickly what is expected of them as members of society.

Influential on this was a proposal last year by the business leaders group Keizai Doyukai (Japan Association of Corporate Executives) calling for schools to specialize in basic academic work, while "free classrooms" would provide instruction in music, art, and other non-core subjects that do not need to be graded. For teachers, these free classrooms would be able to appoint volunteers from the local community, and attendance would be entirely up to the child.

There are limits to what schools are able to accomplish in the cause of diversity, which is why it is also worth looking to the family and community. But above all else, the society of the future will demand a new kind of school learning. The Central Council's report envisions that the new educational curricula will include such subjects as international understanding, information science, and environment. It recommends setting aside time for "comprehensive learning" that is not bound by traditional disciplinary frameworks. The new educational content would be pursued during those hours. One of the upshots of this would be to free up elementary-level English education, which would no longer require teachers to use textbooks or assign grades. Though the role of schools will decline, it is necessary to set aside time to study new subjects, and this is the best policy that the Council felt it could recommend.

However meandering the path, Japanese education is diversifying. Part of the impetus comes from changes in the way young people think and the increased accessibility of high school and university education. Further motivation comes from a recognition of the need to change if Japan is to prepare itself for the 21st century.

Change will bring its own demands and strictures. I am reminded of an experience I had while reporting on a graduate-level night school. Salarymen would run to class after work, taking time to slurp up a bowl of noodles along the way. Once there, they would study their field—be it economics, industry, or whatever—until late at night before finally heading home. "We don't know what the future might hold," they explained to me, "but we want to be ready." I saw in that attitude a valiant attempt to adapt to a new world that was at once more free and also more demanding.

Either way, the Japanese of tomorrow will not just be "worker bees" content to quietly carry out the tasks assigned them. They will be individuals who seek to use their own strengths and talents in the achievement of self-realization. At the deepest levels, what the educational reforms being attempted by so many institutions in so many sectors of society are attempting to foster is this new breed of Japanese.

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RATES OF EXCHANGE

Japan has long lagged behind other countries in accepting foreign college students. To address this imbalance, in 1983 the Japanese government unveiled a plan—under the supervision of the Ministry of Education, Science, Sports and Culture (hereafter referred to as the Ministry of Education)—to boost the number of foreign students coming to Japan. The goal was to accept 100,000 foreign students per year by the beginning of the 21st century. Early in the implementation of the plan, the number of foreign students coming to Japan exceeded the government's expectations, but growth has slowed in the last several years. LOOK JAPAN spoke with Hideki Hayashida, director-general of the Science and International Affairs Bureau at the Ministry of Education, to see what the government is doing to get the plan back on track.

LOOK JAPAN: It's been 13 years since the government's 100,000 Foreign Students Plan was announced. How is the plan going?

HIDEKI HAYASHIDA: As of May 1995, there were 53,847 foreign students in Japan. The term "foreign students" refers to students from abroad who study at any Japanese junior college, technical college, special training college, university, or graduate school, and who reside in Japan with the visa status of "college student." Last year was the first in which enrollment fell short of the ministry's target figure. Student exchange programs are extremely important as a means of improving education and research, both in Japan and abroad. They are also an effective means of promoting mutual understanding and cooperation, and they enable Japan to contribute to the development of human resources in other countries. For these reasons, we are pursuing various policies to ensure that the plan's goals are achieved by the beginning of the 21st century.

LJ: What specific steps has the government taken to counter the recent decline?

HH: We have increased the budget for Japanese government scholarships for foreign students from ¥19.1 billion ($172.7 million) in fiscal 1995 to ¥20.5 billion ($185.4 million) in fiscal 1996. Also, because last year marked the first occasion since the plan was conceived that the number of privately financed students declined over the previous year, we have increased the budget for honors scholarships and other assistance available to such students, from ¥10.4 billion ($94 million) last fiscal year to ¥12.4 billion ($112.1 million) this fiscal year. We are also striving to secure more accommodations for foreign students. As of May 1995, 14,000 foreign students were staying in housing owned by universities or nonprofit organizations. We plan to expand housing so that by the beginning of the 21st century, 40,000 foreign students can be accommodated by these types of institutions.

The public and private sectors are making efforts to ensure that the economic slowdown does not curb the number of foreign students coming to Japan.

In addition, we have initiated a new support system. Until recently, most foreign students accepted to Japanese universities stayed for several years to earn their degrees. However, the number of non-degree students who want to study at Japanese universities for shorter periods is increasing, so in fiscal 1995 we launched the Short-Term Student Exchange Promotion Program to support such students. The program provides scholarships for foreign students who remain officially enrolled at institutions in their home countries while attending courses at Japanese universities for one year or less. The credits these students earn in Japan are then transferred to their home institutions. As a result of the program, the number of national universities that offer special classes conducted in English for short-term exchange students has recently been increasing.

Last fiscal year, this program was limited to students from the Asia-Pacific region, but it was so well received that we have now opened the program to students all over the world. Enrollment in the program increased from 1,000 students in fiscal 1995 to 1,700 in fiscal 1996.

LJ: Housing is expensive in Japan's urban centers, and the strong yen places a further economic burden on foreign students. What steps has the government taken to reduce this burden?

HH: An additional 311 housing units for foreign students will be built at the national universities in fiscal 1996. We are also offering subsidies to nonprofit organizations that support foreign students in various ways, one of which is helping them to secure housing. In addition, we have asked private companies to accept foreign students into their dormitories. As of March 1996, 733 foreign students were residing in company dormitories. This was made possible by the assistance of the Japan Association of Corporate Executives, which helped us secure the cooperation of the business sector. Because the public sector alone is incapable of accommodating all foreign students, we must also make private citizens understand the importance of hosting foreign students and encourage them to get involved.

LJ: What about foreign researchers coming to Japan? What is the situation?

HH: In fiscal 1994, 5,288 foreign researchers came to Japan—and that's only those who came on programs affiliated with the Ministry of Education. Although their number increases every year, there are still more Japanese researchers who go abroad than foreign researchers who come to Japan. In the case of the U.S., for example, the ratio is about four to one.

LJ: How do you account for this imbalance?

HH: In the case of the U.S., many American institutions and researchers lead the world in their respective fields. That is why more researchers now want to go to the U.S. to conduct research. However, more and more Japanese institutions are building international reputations. In fact, researchers from abroad are currently conducting research at institutions such as the National Laboratory for High Energy Physics, located in Tsukuba Science City just outside Tokyo, and the Institute of Space and Astronautical Science in Sagamihara, Kanagawa Prefecture—both of which are operated under the supervision of the Ministry of Education. Once such focal points for specialized research become more widely known, many more researchers will want to come to Japan to carry out their work. Because the exchange of researchers is important both for raising academic standards in Japan and for advancing scientific research throughout the world, we are making efforts to inform the international community that cutting-edge research is indeed being conducted in Japan. To that end, we are sponsoring seminars at research institutes and increasing the number of programs that enable young researchers from abroad to become involved in research activities at Japanese facilities.

LJ: What about foreign professors and other instructors teaching at Japanese universities?

HH: There are currently 461 foreign instructors who hold official posts, such as professor or associate professor, at Japan's national and other public universities. There are also 386 foreign lecturers teaching in non-official posts at national universities and national technical colleges.

Because of the high demand for language instruction in Japan, language teachers inevitably account for a large proportion of the foreign instructors. Whatever the field of specialization, however, we hope to benefit not only from the instructors' knowledge but from the more open and flexible research environment they foster.

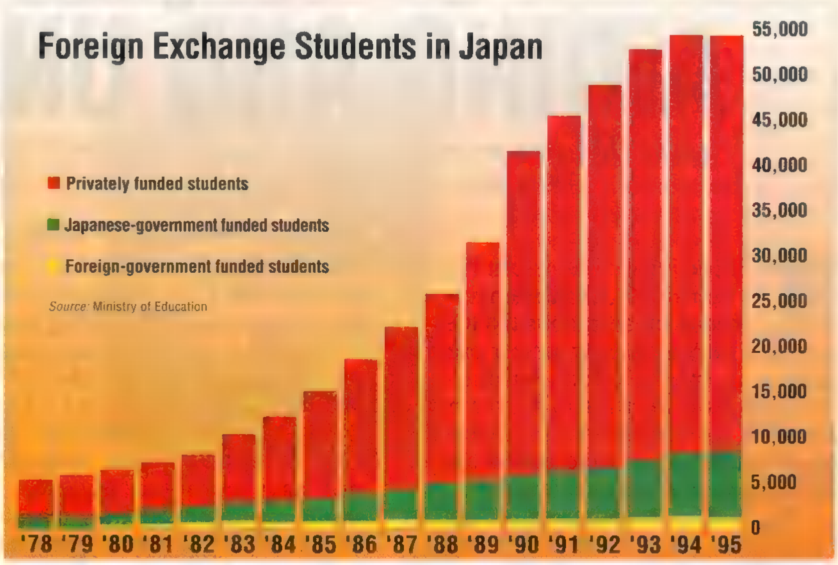
LJ: Looking at junior high and high schools, the JET (Japan Exchange and Teaching) program has been instrumental in providing foreign language instruction and international exchange opportunities for young students. What is the status of the JET program today?

HH: The JET program, launched in 1987, is administered by local public bodies with the support of the Ministry of Foreign Affairs, the Ministry of Education, and the Ministry of Home Affairs. To date, 30,371 young people from 18 foreign countries have worked in Japan under the program. Participants work in one of three capacities: 1) as Coordinators for International Relations, who work in the international exchange departments of local public bodies, where they help edit and translate foreign-language materials and assist in planning and implementing international exchange programs; 2) as Assistant Language Teachers, who assist with classes taught by Japanese teachers of foreign languages and with the preparation of supplementary teaching materials in junior high and high schools; and 3) as Sports Exchange Advisers, who work in the international exchange departments of local public bodies, where they offer athletic guidance and help to plan and hold sporting events. Assistant Language Teachers are by far the most numerous: of the 5,023 people invited to Japan under the JET program in 1995, 4,574 of them were in this category.

The program has been very beneficial for junior high and high school students, giving them the opportunity not only to improve their communication skills in a foreign language by practicing with a native speaker, but to learn firsthand about

JULIAN KIRK

other countries through their interactions with their foreign teachers. Japanese teachers of foreign languages and local government employees also gain valuable experience working side-by-side with people from other countries. For the participants, living and working in Japanese society provides an opportunity to deepen their knowledge of Japan. Though it is occasionally reported that some ALTs are dissatisfied with their role as assistants to Japanese teachers, or that ALTs find it difficult to establish good relationships with them, I believe that tackling such problems in good faith is an integral part of internationalization.



Source: Ministry of Education

LJ: Turning to international cooperation in education, could you explain what steps the government has taken to encourage Japan's national universities to accept trainees from developing countries?

HH: The national universities are accepting trainees who have been invited to Japan from developing countries by the Japan International Cooperation Agency (JICA). Education plays a crucial role not only in developing human character and teaching skills, but also in promoting the autonomous growth and development of the nation as a whole. Education raises the standard of living. This in turn increases productivity, which contributes to national economic and social development. While all countries recognize the importance of promoting education, some face serious economic constraints. Lacking sufficient financial resources to invest in education, many do not have an adequate number of universities. When requested to do so by the countries concerned, national universities in Japan accept trainees from these countries through arrangements made by the Ministry of Education. The goal is for the trainees to take their newfound skills back home so that they can contribute to the social and economic development of their native countries. In the future, we hope to expand the scope of the program to include local public bodies in Japan that can encourage their communities to welcome educators, educational administrators, and other personnel from developing countries; provide these foreign educators with opportunities to meet and exchange ideas with Japanese educators; and conduct training sessions.

LJ: When Japan's economy was booming, the public and private sector actively recruited foreign students and researchers from other countries. Now that Japan is in a period of economic stagnation, however, growth in the number of foreign students has apparently slowed, as we've already discussed. Some people are concerned that the further expansion of foreign exchange programs will be dependent upon economic developments. What direction do you think public and private organizations involved in promoting exchange will take in the future?

HH: After their meeting last April, U.S. President Bill Clinton and Japanese Prime Minister Ryūtarō Hashimoto declared that exchanges between young people from both countries constituted an important pillar supporting amicable bilateral relations. The same can be said for relations between Japan and any other country.

When the Ministry of Education announced its plan to accept 100,000 foreign students per year by the beginning of the 21st century, it seemed to me that tremendous effort would be required in two areas: first, securing the necessary funding to realize the plan, and second, getting the bureaucracy to move more quickly. While these initial concerns proved valid, I believe we have done quite well so far.

Looking at society as a whole, until recently most Japanese have had few opportunities to live side-by-side with foreigners. In many cases, Japanese have been so intent on making sure that foreigners enjoyed their stay in Japan, and that they left with a good impression of the country, that they tended to treat foreign visitors like guests. Now, however, many people from abroad have established themselves—either temporarily or permanently—in communities throughout Japan, where they have developed very natural relations with the local population.

Of all public and private high schools in Japan, 620 (11.3%) have established sister-school relations with high schools in other countries and are engaged in teacher and student exchanges (as of July 1, 1995). This has increased the likelihood that young Japanese will have some kind of interaction with people from abroad.

Although foreign exchange takes various forms, I believe that universities play a particularly important role as focal points for international exchange in local communities throughout Japan. Many things must still be done to make these focal points more effective. For example, counselors with an understanding of the differences between Japanese culture and the cultures of foreign students should be assigned to each university so that students will have someone to talk to when they encounter difficulties. Also, we should expand programs that enable university staff to go abroad to observe how foreign students are received in other countries. Another alternative would be to hold conferences for administrators at Japanese universities who are in charge of exchange programs.

BY **RYŪKO IIKUBO**

EIICHIRŌ IWASA

Hideki Hayashida has served as the director-general of the Science and International Affairs Bureau at the Ministry of Education, Science, Sports and Culture since July 1995. He entered the ministry in 1966 after graduating from the Department of Law at Kyoto University.

AIDING AND UNABETTED

Many Japanese nonprofit organizations operate without the legal recognition or tax breaks that their civic-minded efforts would seem to merit. What's holding them back?

BY **MASAYUKI DEGUCHI**

THE activities of nonprofit organizations (NPOs) and nongovernmental organizations (NGOs)—both of which include volunteer organizations as well as foundations and associations—are attracting ever more attention around the world. Until recently, however, the exact size and scope of NPO operations was unknown.

To clarify the situation, more than 100 researchers from 12 countries formed in 1990 the Comparative Nonprofit Sector Project. Headed by Professor Lester Salamon of Johns Hopkins University, the researchers first sought to devise a common definition of the term "NPO" that would take into account legal and organizational differences in the various countries. They then carried out quantitative research in their respective countries.

In the case of Japan, NPOs were taken to include the following: charitable organizations (incorporated foundations and associations) falling under Article 34 of the Civil Code, schools (including private universities) falling under the Private Schools Law, incorporated social welfare organizations under the Social Welfare Service Law, and hospitals founded under the Medical Service Law. In Japan, however, many NPOs do not have corporation status. These unincorporated NPOs—which were excluded from the research calculations—include organizations that promote environmental protection, international exchange, and the arts.

Findings from seven of the countries (France, Germany, Hungary, Italy, Japan, the U.K., and the U.S.) were announced during 1994. The size of the nonprofit sector in each country was determined according to expenditure. Overall NPO expenditures in the seven countries totaled $601.6 billion, or 5% of their combined GDPs. Japan ranked fifth, with 3.2% of its GDP devoted to NPO expenditures. Japan's total expenditure, on the other hand, was second only to the U.S., at $94.9 billion.

NPOs in the seven countries employed 11.8 million people, or 3.5% of their combined workforces. NPOs in Japan employed 1.4 million people, some 2.5% of the nation's labor pool, and five times the number of people employed by Hitachi, Japan's biggest corporate employer.

On the basis of these findings, Professor Salamon wrote in the July/August 1994 issue of the U.S. magazine *Foreign Affairs* that "we are in the midst of a global 'associational revolution.'" This assertion is supported by recent events in Japan.

A RUSH FOLLOWS THE QUAKE

Japanese may have first become aware of the associational revolution in the days following the Great Hanshin-Awaji Earthquake of January 17, 1995,

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SERVING OTHERS: *In the wake of the Great Hanshin-Awaji Earthquake, the government-authorized 'charitable organizations' could provide very little in terms of a volunteer pool. Here, ordinary citizens serve up food to their beleaguered countrymen.*

when thousands of ordinary citizens converged on Kobe and its surrounding areas bearing water, food, and blankets for people in need. Many volunteers formed small, impromptu organizations—such as the Civil Group to Aid Citizens in Devastated Areas—concentrating their relief activities on distributing provisions, cleaning up debris, and arranging temporary accommodation. Specialist organizations, such as the Association of Medical Doctors of Asia (AMDA) also volunteered their services. It is estimated that in the weeks following the quake, roughly 1.3 million people volunteered to participate in relief activities of one sort or another.

One side effect of this upsurge in volunteerism was an increased awareness of political issues related to NPOs. The quake demonstrated that the government authorized "charitable organizations" could offer very little in terms of a volunteer pool. Many of the volunteer organizations that had the greatest impact, including the two mentioned above, are unincorporated, unapproved, and operate without the benefit of tax breaks.

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RAISING AWARENESS: *The efforts of volunteers like this man following the Kobe quake galvanized nationwide support for the introduction of NPO legislation.*

The terms "volunteer revolution" and "NPO" were widely used by the Japanese media in the aftermath of the Kobe quake, but the media's conception of these terms was quite different from the definitions drawn up by Professor Salamon's research group. The expression "NPO" as used by the Japanese media is taken to mean an informal, unapproved organization. But in Japan, an "NPO" is something closer to a not-permitted organization than to a nonprofit organization. This situation is one product of the vagaries of the Japanese legal system.

LEGAL TANGLE

The Japanese incorporation system is based on civil law drafted exactly 100 years ago. Corporations are not classified as profit or nonprofit organizations, but as profit- or public-welfare organizations. The Japanese legal system does not recognize nonprofit, not-for-charity organizations. By definition, public-welfare corporations require government permission to be established. Government agencies have tended not to approve small organizations, and because these agencies held to a narrow definition of "charity," the majority of civil, nonprofit activities have been conducted outside the system. Organizations like AMDA, for example, have to conduct their activities without the backing of law.

Concerned parties have long complained of the inadequacies of this system. For more than ten years, the private sector has been calling for the enactment of a fundamental public-welfare activity system and a revision of the public-welfare corporation tax system. These calls led to a proposal by the government's Management and Coordination Agency for the establishment of an intermediate corporate system that would address nonprofit, not-for-charity corporations.

As Professor Salamon points out in his book *The Emerging Sector: An Overview* (Johns Hopkins University, 1995), "The key issue for the future of the nonprofit sector in Japan is whether the prevailing relatively rigid system of state control will survive, or be replaced by a more flexible and open system more conducive to the formation of nonprofit organizations."

While the scale of Japanese NPOs may appear large from an international perspective, many of the organizations operate as semi-governmental entities controlled by government, or were established by private enterprises; very few are civic organizations. Legal infrastructure is a prerequisite for the development of bona fide NPOs.

In one fell swoop, the Kobe quake galvanized support for the introduction of NPO legislation. The process by which these bills were drafted was unique in itself. First, legislation was drawn up by Diet members themselves. This was extremely unusual, because in Japan legislative proposals typically originate in the bureaucracy. Second, the bills were drafted primarily by young parliamentarians serving their first or second elected terms. In other words, agreement within the political parties was obtained from the bottom up. In the past, the Liberal Democratic Party had doggedly protected its system of succession and seniority. For members in their first or second elected term to play such a major role was a revolutionary development. Third, the drafting committee held public debates with civic organizations on a number of occasions. These three features made for a completely novel procedure that promised to bring change to Japan's tradition-bound legislative process. The individuals drafting the legislation, and the general public, felt they were participating in a "civic society," rather than a society under bureaucratic rule.

Despite the efforts of individual legislators, however, the ruling coalition declined to submit a bill to the Diet, having failed to build a consensus among the three coalition parties. The NPO draft legislation submitted by the opposition New Frontier Party also suffered continuous postponement, while the illegal activities of the Aum Shinrikyō religious sect only accentuated opposition to the deregulation of nonprofit organizations. In the final analysis, the novelty of the legislative process probably did not help matters, either.

Volunteer activities following the Kobe earthquake earned the NPOs great kudos from the Japanese public. With a heightened sense of living in a civic society, people who had previously relied only on the government are now pursuing the establishment of NPOs. The activities in these organizations are increasingly oriented toward serving the aging society.

Yet, as organizations operating outside the Japanese legal system, NPOs are in a fragile position. The idea that Japan is a government-led society is changing. There is an urgent need for the establishment of a legal system that addresses the needs of NPOs and gives them strength as fully recognized organizations.

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I WANT TO HOLD YOUR HANDYPHONE

Since deregulation of the mobile communications industry in 1994, the market for mobile phones in Japan has been transformed. While foreign and domestic companies battle it out for a share of the burgeoning new business, consumers are enjoying the benefits of the convenient, diverse, and affordable services they now provide.

BY **HIDEKI WAKABAYASHI** AND **EISAKU ŌMORI**

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WELL CONNECTED: *By year's end, almost 15% of all Japanese will carry a mobile phone.*

CHECK this new industry out for size and growth potential: In fiscal 1995, 10.2 million people subscribed to the 26 mobile phone services in Japan. With an average of 720,000 consumers still signing on each month, it is conceivable that 20 million people could be connected by the end of this fiscal year. If you factor in the 1.5 million subscribers to the 28 Personal Handyphone System (PHS) services—the first of which became available in July 1995 and which now attract 300,000 new subscribers each month—then approximately 15% of Japan's total population will be carrying mobile phones by the end of this fiscal year.

Total sales registered by companies providing mobile phone services in fiscal 1995 reached ¥2 trillion ($18 billion), with sales of the units themselves rising to ¥959 billion ($8.7 billion), more than twice the 1990 figure of ¥440 billion ($4 billion). In fiscal 1996, the industry expects to ship approximately 10 million new mobile phone units—more units than for any other electrical appliance, televisions and VCRs included.

Capital investment in the communications sector in fiscal 1996 is expected to increase 18% on the previous year, rising to ¥4.4 trillion ($39.8 billion)—more than 10% of total capital investment in all industries. Capital investment in the mobile communications sector in fiscal 1996, which is already more than for the steel industry, is set to increase by 68% to ¥670 billion ($6 billion) for the eight companies belonging to the Nippon Telegraph and Telephone (NTT) mobile communications network. Other mobile phone and car phone companies will experience an increase in capital investment of 66%, to ¥540 billion ($4.9 billion). Who, even ten years ago, could have predicted the emergence of such an enormous industry?

RINGING IN THE NEW

Growth in the mobile communications sector owes a lot to the "four *d*s revolution" of 1994, when deregulation in Japan helped to bring about discounting, downsizing, and digitalization.

By spurring market competition, deregulation played a key role in the discounting phenomenon of the mid-1990s. After the complete liberalization of the mobile phone market just two years ago, the rate of market saturation accelerated and has now reached the same level as for other industrialized nations. This extraordinary rise is attributable to the following: first, the average price per terminal plummeted in the year following liberalization from ¥70,000 ($630) to ¥40,000 ($360); and second, connection fees and other basic charges fell approximately 45% by the end of 1994.

For an example of the third *d*, downsizing, take a look at what happened with the PHS services. By greatly reducing the size and cost of the conventional radio base stations from which mobile telephone companies operate, PHS companies were able to offer a radio communications system with much cheaper call charges than those for mobile phones. PHS service providers went into direct competition with the mobile phone companies for subscribers, vitalizing both types of service.

Which leaves us with the fourth *d*, digitalization. In addition to the conventional analog 28 MHz band, an 800 MHz band and a 1.5 GHz band were allocated by the Ministry of Posts and Telecommunications for digital services. NTT Mobile Communications Network (NTT DoCoMo) has been providing new digital communication services in the Tokyo metropolitan area since 1993. As well as providing improved sound quality and faster transfer speeds, the shift from analog to digital effectively enables international compatibility between systems that differ from country to country.

Although the four *d*s revolution threw the domestic communications sector into disarray in the short-term by increasing competition between companies, the liberalization of the mobile communications market in Japan has also encouraged the growth of many innovative companies the world over. The mobile telecommunications market heralded the dawn of the new multimedia radio age.

Prior to the four *d*s revolution, the rate of growth in demand for mobile phones in Japan hovered at a low level of approximately 2%, compared to 5% in the U.S. and Singapore, for example. In December 1992, a Ministry of Posts and Telecommunications report concluded that the system of renting mobile phone terminals (including car phones) should be fully liberalized beginning in April 1994. This was also emphasized in the subsequent emergency economic package put forward by the Hosokawa government in September 1993. In many other countries, including the U.S., the system of purchasing mobile phones outright has been in force since the mid-1980s, and, hand-in-hand with liberalization and deregulation, helped spur the proliferation of mobile phones.

UPWARD MOBILITY

The deregulation measures of April 1994 bear some comparison with the April 1985 measures that liberalized telephone retailing restrictions and allowed cordless telephone companies to utilize radio waves. On the basis of that precedent, business for companies with a monopoly on telephone terminals was expected to deteriorate. However, while a decrease in the market share of NTT-supplier manufacturers was inevitable, the changes in market structure were not as great as they had been following liberalization in 1985. The reasons for this are twofold. First, mobile phones are relatively sophisticated; consequently, the major electrical appliance manufacturers, who were only experienced with simple cordless phones, could not immediately enter the mobile phone market. Second, Japan's established terminal manufacturers had already secured themselves a share of the liberalized U.S. and European markets.

Those who have benefited most from deregulation are, first, the major Japanese and overseas companies that until 1994 had not been able to participate in the domestic market, rather than the Japanese home electrical appliance manufacturers that benefited when telephones were liberalized in 1985; and second, the consumer. Without the competition fostered by deregulation, it is arguable whether today's mobile terminals would be so small, or would provide 20 hours of continuous standby and 1.5 hours of continuous call time. Still, downsizing is approaching its limits, and realizing this, companies are now striving for further price reductions and a wider variety of terminals.

The key to future success is developing a product that is compatible with multimedia extensions. As added value, or capability, in the semiconductor component of large-scale integration (LSI) circuits increases, so the relative value, or price, of the unit decreases. Moreover, it is likely that as the relative valve, or price, of the software for simple radio devices increases, phone units will become closer to personal digital assistants. This trend will probably become even more conspicuous with the international standardization that has been brought about by digitalization. It is assumed that the dynamics of deregulation will serve to close still further the gap between the share of the local market held by domestic manufacturers and that held by manufacturers overseas.

Deregulation has been a notable success in the case of the mobile phone market. The diversification of communications services, types of terminals, and the reduction in call charges have brought significant improvements to users' lifestyles. The days when the mobile phone was the preserve of the hard-pressed, well-dressed businessman are over; these days, people of all ages and walks of life carry a mobile phone. As the user group continues to expand, so it will create demand for new services, and as the demand for new services is met, so the user group expands. How much longer before we're all carrying a phone?

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DATA BOX

SHORT TAKES

Lessons in love A Tokyo matchmaking agency has come up with a way to help men overcome their shyness with women: practice dates. The men go out on dates with female "instructors," then sit down with them afterwards for a critique. It seems that many men today, especially those working in technical jobs, don't interact with people often enough and thus lack the conversational skills needed to attract a mate. So a lot of them are willing to fork out ¥360,000 ($3,250) for a package of 12 practice dates.

Seized swords In September 1945, the Allied Occupation forces rounded up all the swords in Japan. Some no doubt left the country as souvenirs, but 4,576 were put into storage at the Tokyo National Museum. Now the government has announced a program to return those swords to their rightful owners. The agency in charge has been swamped with calls from all over the country. Most of the swords are badly rusted, and there was talk of polishing them all. But the price tag for that would have come to ¥3 billion ($27.1 million), so the government has opted to return them "as is."

Time at the tone The watchmaker CITIZEN surveyed Tokyo office workers on their concepts of time, asking them to be specific. According to most respondents, "early morning" is between 4:50 and 6:30 A.M.; "sleeping late" means you're still in the sack after 8:56 A.M.; "just a moment" (to someone on the phone) means wait 28 seconds; and a "short meeting" lasts 20 minutes. If you're supposed to do something "first thing in the morning," best get it done by 8:56 A.M.

Another story Three-story homes are the next big thing, according to the housing industry. Last year, 72,000 three-story homes were built, accounting for 13% of the total, and the industry expects to build as many as 80,000 this year. The homes are popular not only with urban dwellers, who want to make the most of their small lots, but also with suburban and rural residents, who often need to house three-generation families.

Cost of dying The average Tokyo funeral costs ¥3.8 million ($34,450), according to a Tokyo Metropolitan Government survey of 3,000 people and 300 funeral home managers. That includes ¥1.3 million ($11,750) for the funeral director, ¥900,000 ($8,140) worth of *kōdengaeshi* (thank-you gifts for the mourners), and ¥1.6 million ($14,560) in other expenses. About a third of those surveyed said that *kōden* ("incense money," or cash condolence gifts) covered the costs of the funeral, but 59% said it didn't even come close. Respondents in their 60s and 70s said they hoped to sock away an average ¥3.2 million ($28,570) to cover their own funeral expenses.

"Incense money" is presented in special envelopes such as this.

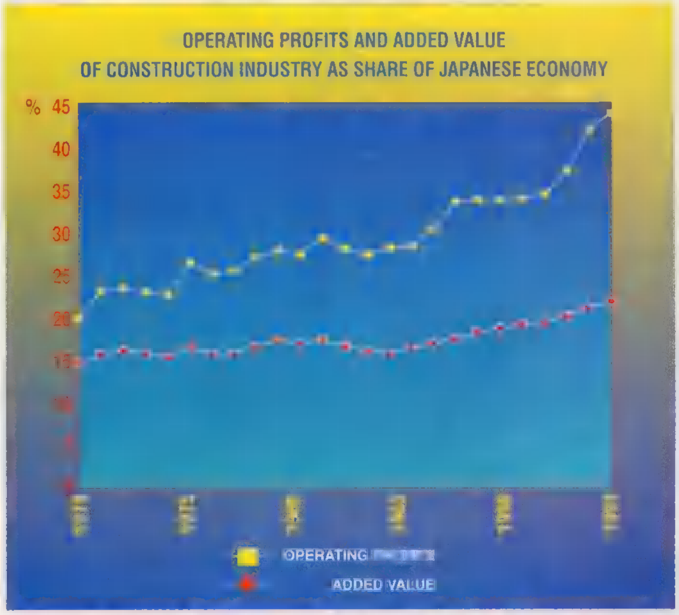
BY **CHARLES WHIPPLE**

CRISIS UNDER CONSTRUCTION

By most estimates, the construction industry is carrying as much bad debt as those notoriously bankrupt housing loan companies. Wear a hard hat: it's crisis time again.

BY **KAZUO UEDA**, UNIVERSITY OF TOKYO, DEPARTMENT OF ECONOMICS

WITH the passage in June of a bill to clean up the defunct *jusen* (housing loan companies), attention in Japan has now turned to other carriers of defaulted debts. Next on the list are the rest of the non-bank lenders and the construction companies. The non-banks will be a particularly thorny issue to deal with; many do not have a main bank to take responsibility for them.



The crisis looming among the general contractors is perhaps no less pressing, for they are not just burdened with dud loans—the big construction companies seem to be a microcosm of everything that is wrong with the Japanese economy. The journal *Nikkei Business* analyzed the plight of the construction industry in its July 8 issue. As the journal points out, the first problem besetting the general contractors is the bad debt they are carrying, defaults that are directly linked to the drop in land prices since 1990. The contractors' core business is, by rights, putting up buildings, but they went beyond that, acquiring land in advance on behalf of companies that wanted to build new factories or branch offices. When the project was done, the contractor would sell both the land and the building to the customer, taking a nice profit on each. Until 1990 or thereabouts, this system worked well for contractors. They could land big construction orders while also pocketing capital gains on the land investments.

But the downside of the practice began to become apparent around 1990. Verbal promises of construction contracts had been sufficient for the firms to go out and buy the land, but as their customers' business situations worsened, the contractors increasingly found themselves with orders that never materialized and a large inventory of nonperforming land that was racking up capital losses. That is not all the contractors were doing wrong. They were also guaranteeing the debts of their affiliates. It is difficult to calculate just how much of this debt has gone bad, but some estimates suggest that the 57 listed construction companies are exposed to between ¥2 trillion and ¥3 trillion ($18–27 billion) in bad debts from this practice alone. *Nikkei Business* does a flow-side analysis and estimates that if interest rates, which most think are poised for a rise, go up by about 2%, eight of the twenty general contractors currently still in the black will go into the red. Obviously, the journal is only looking at debt service in relation to revenues, not trying to measure bad debt directly; nonetheless, as a first approximation, these figures suggest that construction companies are carrying roughly as much bad debt as the jusen.

WORRIES BUILD

So why has there been very little mention of a "general contractor crisis," in spite of the potentially enormous sums involved? Because public works contracts have been keeping contractors afloat for the past several years. Unfortunately, public largess is expected to become scarcer in the second half of this year, and that has people worrying that a crisis is in the works. The construction industry's relationship with the government also makes it hard to tell just how much bad debt is involved. Were companies to bite the bullet, come clean on their exposure, and start writing off their debts—even though it meant posting losses for a while—they would face the strong possibility of being shut out of public works contracts. That is a powerful incentive to cook the books. For those placing orders, however, this means being even less able to gauge the health of any given contractor when entertaining bids.

On the subject of ties between government and construction, the issue of *dango* (bid-rigging) on public works contracts should still be fresh in people's memories. Though the central government has taken steps to make its bidding process more transparent—and they appear to be working—local government bids are still opaque. This opaqueness may have had salutary effects by alleviating some of the competition and giving firms a chance to work down their bad debts. But such buffers will be fewer and farther between in the future, which further exacerbates the worries.

The now-troubled construction industry represents a large portion of the Japanese economy. Together with the real estate industry it employs 12% of the population, and it creates 22.5% of the value added and 43.8% of the operating profits (1994 figures). It is arguably the most important industry in the country, and its share of the pie has been growing since the 1970s (see figure). Few people, however, think that this is because builders and real estate agents have been making healthy gains in productivity or seeing a boom in demand for their services. The more widely accepted explanation is that ever since the rule of former prime minister Kakuei Tanaka in the early 1970s, the construction industry has benefitted from government protection because it serves as a vote-getting machine for politicians, particularly in the LDP. Now that the faith in ever rising land values has been destroyed, perhaps it is time to liquidate the industry's function as a vote-getting machine as well.

DEFERRING JUDGMENT

By leaving open a legal loophole for nuclear weapons, the International Court of Justice also leaves unanswered the question, How can humanity get out from under the shadow of the bomb?

BY **YOSHIHIDE SOEYA**, KEIO UNIVERSITY, DEPARTMENT OF POLITICAL SCIENCE

ON July 8, the International Court of Justice (ICJ), based in The Hague, the Netherlands, issued an advisory opinion on the lawfulness of the threat or use of nuclear weapons for the first time in its 51-year history. Reflecting a sharp division between the antinuclear sentiments of a significant portion of the world's population and the strategy of nuclear deterrence avowed by nuclear powers and their allies, the ICJ's decision was, in the final analysis, an act of political compromise.

EXPERT WITNESSES: ***The mayors of Nagasaki, Itchō Itō (left), and Hiroshima, Takashi Hiraoka (right), presented damning testimony at proceedings of the International Court of Justice held in The Hague on November 7, 1995.***

REUTERS • SUN

While asserting that the threat or use of nuclear weapons runs counter to the principles that underlie international law, the court concluded that illegality could not be proven because there exist neither written nor common laws that either sanction or prohibit the threat or use of nuclear weapons. The court stated, moreover, that it "cannot conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defense, in which the very survival of a state would be at stake." The judges made it clear, nonetheless, that the international community is obliged to promote nuclear disarmament.

Discouraged by the ICJ's decision—and particularly by its position with regard to self-defense—Mayor Takashi Hiraoka of Hiroshima remarked, "The outcome is essentially an endorsement of the status quo. It makes me wonder what the role of international justice is." Echoing that sentiment, Itchō Itō, the mayor of Nagasaki, reported at a news conference that he felt "enraged."

Given Japan's reliance on U.S. military assistance—including the U.S. nuclear umbrella—Prime Minister Ryūtarō Hashimoto was apparently in no position to comment on the court's ruling. In June 1995, when the Japanese government (then under the Murayama administration) was called in by the ICJ to state its position on the issue, it declined to argue for the unlawfulness of nuclear weapons. The government's position was clearly a reflection of its national security policy, taking into full account the U.S. assertion that the matter should never have been taken up by the ICJ in the first place. Subsequently, the Japanese government was soundly criticized by the Japanese press and public.

It would be inaccurate, however, to suggest that the Japanese government is uninterested in nuclear disarmament. To the contrary, Hashimoto was encouraged by the ICJ's call for disarmament, and suggested that "the court's judgment would expedite an early conclusion of the proposed Comprehensive Test Ban Treaty." Nuclear disarmament is indeed the will of Japan, the only nation to experience the devastation of nuclear weapons. It is not the case that there is an ideological split between the government and the people.

A RATIONAL NEW APPROACH

The court's decision leaves us wondering if there is any way out of the nuclear dilemma. During the Cold War, when the nuclear stalemate was a fact of life, the chasm between government policy and public will seemed insurmountable. It was the position of the "realists" that, under the Cold War's zero-sum situation, nuclear disarmament was an impossible, or even an undesirable goal, because it was believed that once the process of disarmament began, the political and military situation in the world would quickly become uncontrollable. The realists argued that it was not the presence of nuclear weapons that precipitated the Cold War, but rather the Cold War that had led to the massive stockpiling of these weapons. The solution proposed by the realists, therefore, was not disarmament but arms control.

The late Professor Masataka Kōsaka of Kyoto University was one of the first Japanese opinion leaders to advocate the realist position, despite the impassioned pacifism that has characterized public opinion in Japan since the end of World War II. Shortly before passing away in May this year, at the age of 62, he began to argue that the end of the Cold War had brought about such profound changes in the world that it was now both realistic and meaningful to pursue nuclear disarmament, if not actually accomplish it, in the immediate future. In the last article that he penned, Professor Kōsaka put forward his argument as follows.

Nuclear weapons serve as a symbol of the "irrational will" of states, and since Nagasaki, that is the only practical purpose to which they have been put. It is their symbolic power, the professor asserted, that has prevented the outbreak of a third world war and the escalation of small conflicts. Moreover, we know that even if nuclear disarmament were to be achieved, the ability to create nuclear weapons would continue to exist.

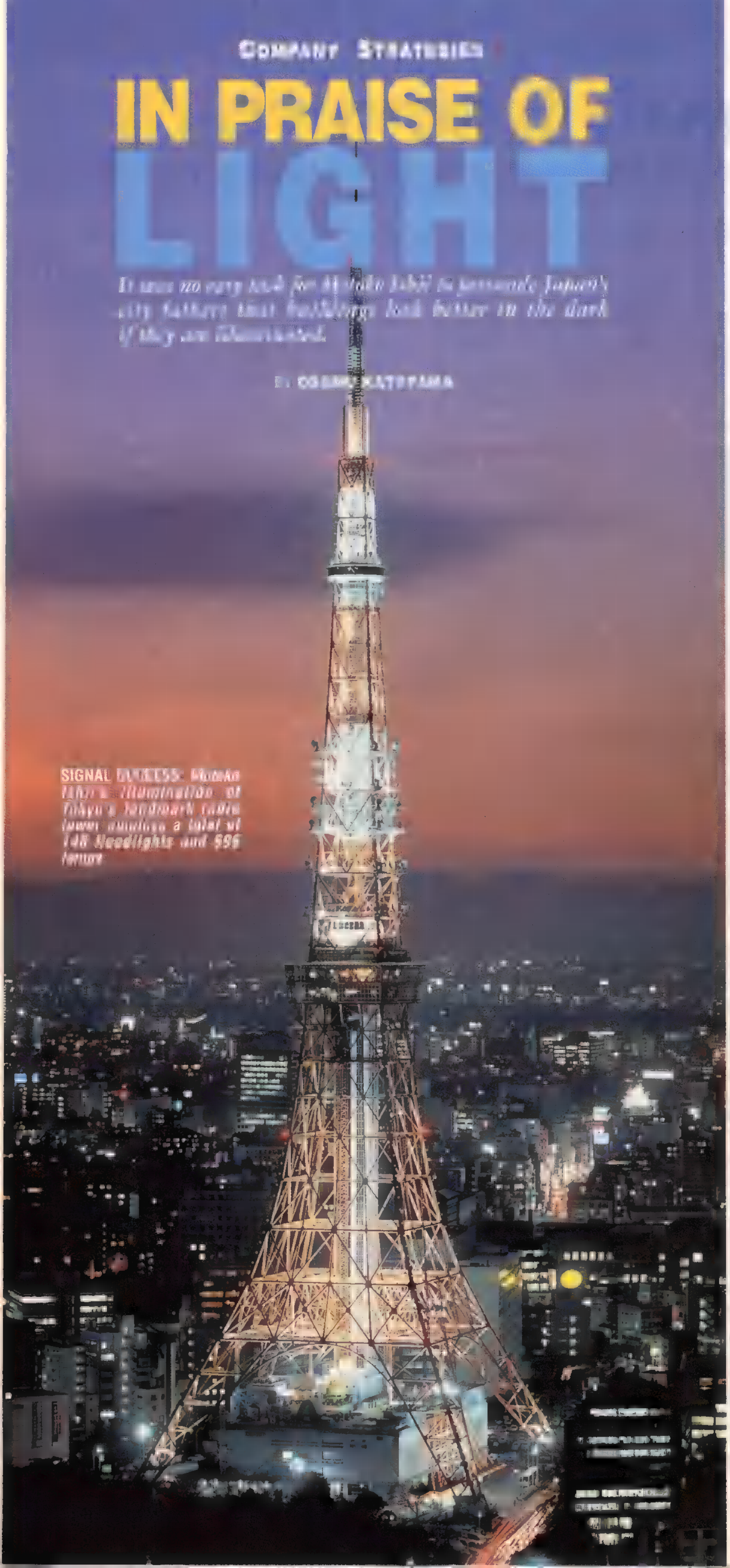
That being the case, Kōsaka proposed, what is the difference between actually possessing nuclear weapons and simply having the capability to manufacture them in a few weeks or months? In other words, the strategy of deterrence could be redefined, to be based on the *possibility* of nuclear armament and not on the actual *possession* of arms. Only in this way, Professor Kōsaka argued, could nuclear disarmament become a realistic alternative that would gain the support of governments around the world. Only in this way could the human subconscious be freed from the specter of nuclear weapons.

These promising ideas, left us by Professor Kōsaka, should encourage long-time supporters both of nuclear deterrence and of disarmament to join together in a rational dialogue at the end of this most irrational of centuries.

IN PRAISE OF LIGHT

It was no easy task for Motoko Ishii to persuade Japan's city fathers that buildings look better in the dark if they are illuminated.

BY OSAMU KATAYAMA

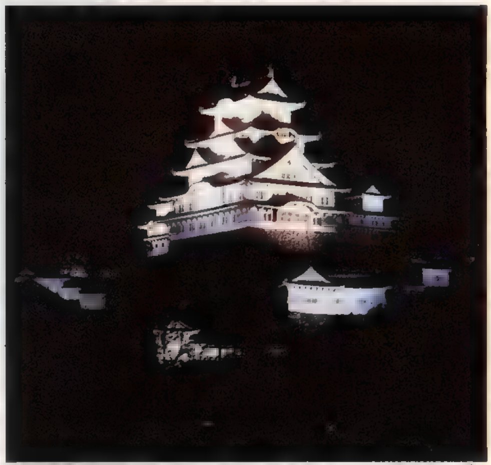


SIGNAL SUCCESS: *Motoko Ishii's illumination of Tokyo's landmark radio tower involves a total of 148 floodlights and 596 lamps.*

"TOKYO TOWER" BY YŌICHI YAMAZAKI, COURTESY OF MOTOKO ISHII LIGHTING DESIGN

THERE are not many famous women industrial designers in Japan, but most Japanese could name at least one: Motoko Ishii, an iconic figure whose name is synonymous across the country—from historic Himeji in Hyogo Prefecture to ultramodern Tokyo—with light.

Ishii's rise to prominence is marked both by her bold initiative and by her stubborn commitment to her goals. After graduating from the Product Design Faculty of the Tokyo National University of Fine Arts and Music in 1962, she was recruited by a small design office, Q Designers, in Tokyo. It was there, while working with a colleague on wall-lamp fixtures, that Ishii's passion for lighting was first warmed. Keen to explore the field of interior lighting, which was then still in its infancy in Japan, Ishii sent samples of her work to the famous Finnish firm Stockman Orno Ab. The company, which employed such lighting luminaries as Lisa Johansson-Pape and Yuki Numias, was impressed with her portfolio and promptly offered her an internship in its design department.



"WHITE HERON": ***Sensitive lighting accentuates the strength and elegance of the 14th-century Himeji Castle.***

"LIGHT UP HIMEJI" BY YUTAKA KŌNO, COURTESY OF MOTOKO ISHII LIGHTING DESIGN

After one year learning the trade in Finland, Ishii again became restless. She wanted to get away from product design and move into larger-scale, architectural lighting. She sent her portfolio to Firma Licht Im Raum in Dusseldorf, Germany—a giant in the field. This was an ambitious move that quickly paid dividends. Ishii was recruited by the company to work on projects including theaters, churches, commercial facilities, and public buildings. Many examples of Ishii's work during her one year stay in Germany are still in evidence—inside the municipal theater in Würzburg, for example.

In 1968, Ishii returned to Japan and set up her own company, Motoko Ishii Lighting Design. Though success did not come, as it were, overnight, by 1970 the fledgling company had landed a number of "light-up" jobs, including the illumination of five sites at the International Exposition in Osaka (1970).

In 1975, Motoko Ishii's business expanded—quite literally—when it landed the commission for the Ocean Expo in Okinawa. The company was responsible for lighting the entire grounds, an area of about four kilometers from north to south and one kilometer from east to west.

"As the plane left Naha for Tokyo," Ishii recalls, "I could look down over the entire grounds; I was astounded that I had been able to light up something so big."

The experience opened Ishii's eyes to the possibilities of environmental lighting. These possibilities she channeled into an ambitious plan: to illuminate the historical sites of Kyoto, Japan's former imperial capital.

"During the daytime," Ishii points out, "you always know that you're in Kyoto. You can see the roofs of the shrines and temples, the pagodas, the lines of the mountains. But at night, if you go up Kyoto Tower and look out over the city, the view is a huge disappointment. Kyoto looks just like every other little provincial city in Japan, right down to its gaudy, neon-lit entertainment district."

SPECTRUM IN SUSPENSION: ***A city scene of rare beauty, Tokyo's Rainbow Bridge pulses lighting patterns that change according to the time, day, and season.***

"RAINBOW BRIDGE" BY YOICHI YAMAZAKI. COURTESY OF MOTOKO ISHII LIGHTING DESIGN

Thus it was that in 1978 Motoko Ishii presented officials of the city's tourism bureau with a plan to illuminate 82 different sights in Kyoto.

"They stared at us with a look of frightened bewilderment and summarily turned the proposal down," Ishii remembers. "Figuring that it was useless trying to argue with them, I decided to show them what could be done. I borrowed some equipment and did an experimental light-up of several historical buildings in the city. But still the officials wouldn't budge."

Undeterred, Ishii packed a van-full of equipment and drove from city to city—Sapporo, Sendai, Osaka, Kanazawa—setting up experiments and demonstrations at her own expense. Although a few officials expressed interest in her ideas, few were ready to admit the need for light-ups.

It was not until 1985 that Ishii's efforts were rewarded and her calls for creating nighttime cityscapes were finally heard. The company had been subsisting on relatively small-scale interior projects, but now the city of Yokohama wanted Motoko Ishii to help in its planned "Light-Up Festival." The next year, Motoko Ishii illuminated 12 buildings in the city, and to great effect.

"Over 800,000 people came to see the light-up over its ten-day run," Ishii says. "The city officials were surprised not only by the level of public interest, but by how small the electricity bill was."

To the obvious approval of the city's residents, Yokohama decided to make the light-up a permanent affair. And that was how Yokohama's night skyline, with its illumination of city hall, museum, and several historical buildings, was born.

In the years that have followed, Motoko Ishii has been responsible for many prestigious lighting projects across Japan, including the Tokyo Tower, Rainbow Bridge, Tokyo Station, Seto Ōhashi Bridge, Hiratsuka Stadium, and Himeji Castle illuminations. Motoko Ishii has become a Japanese nighttime institution.

OUT FROM THE SHADOWS

Ishii sees her success from a historical perspective: "In old Japan, they really knew how to enjoy lights—the way it filters through paper shoji doors and *andon* lampshades, for instance. Jun'ichirō Tanizaki famously captures that sensibility in his essay *In'ei raisan* (*In Praise of Shadows*, 1934). But after the war, and especially since the spread of fluorescent lighting, our sense of light has gone askew. Now people tend to think that you just have to make things bright, or that bright lights are a sign of economic prosperity. After a day under the strip lights in the office, though, it's much more relaxing to relax in a dimly lit room at home. You can and should enjoy the night as well."

Ishii's studio now has a staff of 25 working on 70 projects in Japan and elsewhere. Ishii spends at least four days out of every week on location.

"I try to be on site by about 3:00 in the afternoon. I wander around the area until dusk and on into the night. That gives me a pretty good idea of how the light plays around the building. Take Nagasaki, with its mountains to the west. The sun goes down incredibly fast there, whereas in Hakodate, where there are mountains to the south and ocean on the east and west, it takes forever for the sun to disappear. The color of the light differs from place to place, too. It is something you have to feel for yourself on-site."

Having established urban decorative lighting as a part of the city landscape, Ishii's interests grow ever more ambitious.

"My biggest regret," she says, "is that I was not born 100 years later. Perhaps if I had been, I might have been able to experience the way Earth radiates light from space. I would have liked to use that experience to light up the whole globe." Ⓛ

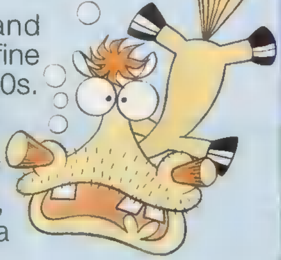
The author is a freelance journalist and writer on economic and political issues. He has published a series of books on the strategies of top Japanese firms and currently heads K-Office, an editorial production company. His latest book is *Jissen keiei kakumei* (*Japanese Business Prepares for the 21st Century: Reinventing the Miracle*. Athlone, 1996.)

THE BLATHERING BOY, THE GOGGLE-E

The characters in iconoclast Fujio Akatsuka's gag *manga* ad

BY **FUSANOSU**

THUS far, this series has concentrated on "story" *manga* (comic books), largely because it is complex works of this sort, often with an element of tragedy, that define postwar Japanese manga from Osamu Tezuka onwards. But it would not do to give readers the impression that Japan is without gag comics. As a matter of fact, prior to World War II, the only manga available were satirical cartoons for adults—most of them political—and amusing, slow-paced comics for children, primarily boys.



Even after the war, boys' comics and satirical adult cartoons continued to define mainstream manga up until the mid-1960s. Although during this twenty-year period story manga made inroads into the boys' genre—thanks largely to the influence of Tezuka—there were also many pleasant, innocent "funnies," and even story manga came to contain their share of gags.

After the mid-1960s, however, boys' story manga took on an ever more serious tone that eventually left no room for humor. The *gekiga* (dramatic comics) genre, an avant-garde movement that emerged out of the comic books produced for the book lenders market of the late 1950s, dealt with serious issues in an attempt to attract young adult readers, and the genre gradually became the mainstay of boys' manga as well. (Though gekiga were originally distinguished from manga, the distinction subsequently became blurred.) Consequently, the average age of the readership of comic books rose rapidly. At the end of the 1960s, the fact that university students were reading manga could still make the news; thereafter, it became an accepted part of everyday life.

It was in the late 1960s that Fujio Akatsuka made his mark as a gag manga artist, his work eventually becoming so popular that it now defines the manga of the times. This was the period during which story manga and gag manga were becoming discrete genres. Akatsuka's manga were anything but the slow-paced children's funnies that had dominated the market up to that time.

His first hit series, *Osomatsu-kun* (1962–1969), was about a lad by the name of Osomatsu who is one of six brothers, none of whom can be told apart from the others. In other words, the series had what amounted to six main characters. The antics of these six siblings were more uproarious and fast paced than anything that had been seen in Japanese manga before (though the

EYED COP, AND THE TIPSY-TURVY TEACHER

ded their own freewheeling, anarchistic twist to the Japan of the 1960s.

UKE NATSUME

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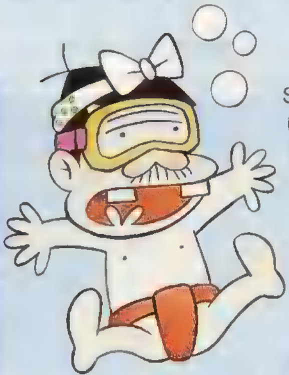
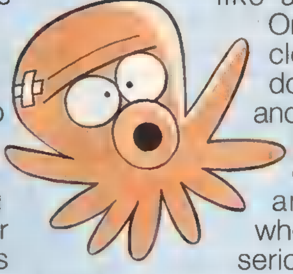


stories were so carefree as to strike us today as almost pastoral). One of the series' main characters is a homeless orphan boy named Chibita, who is frequently taunted by the six brothers and then seeks his revenge. Though on the surface this may seem somewhat cruel, the give and take between the characters is light and amusing, without a trace of unpleasantness.

In *Tensai Bakabon* (The genius Boy Fool; 1967–1970), Akatsuka took his brand of anarchistic nonsense a step further, creating a gang of outrageous characters. For example, there is the goggle-eyed policeman who goes around shooting off his pistol just because he's bored and has time on his hands. Or the "eel-dog," who has the color and tail of an eel, but who walks on all fours like a dog—and is able to speak besides. Or the young boy in sloppy, oversized clothes who has nothing whatsoever to do with the story but suddenly pops up and dances around screaming "Dari-rari-raaan!" (a nonsense expression) and calling out girls' names, his nose running and his mouth drooling. Or the teacher who ordinarily acts like a drunk but becomes serious and proper when he has had a tipple or two.



On top of all this, Akatsuka tried to break down many of the manga world's icons. He would make fun of gekiga by drawing, with obvious gratuitousness, the same kind of detailed backgrounds as the most serious of them employed, or turn his editor into a character and have him appear in the frame drawing absolutely wretched manga.

It was Akatsuka's work that enabled gag manga to become recognized as a distinct genre of ridiculous, slapstick nonsense. He paved the way for a long line of great comic artists in the field.

The author is a well-known cartoonist and essayist. His books include *Kieta makyū* (The vanishing curveball), *Manga no yomikata* (How to read manga), and *Tezuka Osamu no bōken* (The adventures of Osamu Tezuka). Born in 1950, he is a graduate of Aoyama Gakuin University.

• SCI-TECH FEATURE •

WAVES OF WORRY

There's a lot of talk these days about the potential adverse effects of electromagnetic waves, both on our bodies and on sensitive electronics. How big is the problem, and what can we do to solve it?

BY **RISABURŌ SATŌ**

EIICHIRŌ IWASA

TOO CLOSE FOR COMFORT? ***High-voltage power lines tower over a residential neighborhood in Edogawa Ward, Tokyo.***

IN today's world, we live surrounded by all kinds of electrical devices: lights, televisions, and computers are just a few of the most obvious examples. These devices have continued to increase in number and variety since mankind first learned to generate electricity, and they are now so much a part of our everyday lives that we could hardly survive without them.

However, serious doubts have been raised about the safety of the electromagnetic radiation that is generated by electrical devices. In Japan, these concerns have increased markedly in the last two years with the meteoric rise in popularity of mobile phones.

Electromagnetic waves are generated by the interaction of electric and magnetic fields that occurs wherever electricity flows through a medium. Electromagnetic waves travel through space at the speed of light. Electric waves of all wavelengths (including microwaves), visible light, ultraviolet rays, infrared rays, gamma rays, and X rays are all electromagnetic waves. Thus, electrical devices are not the only source of electromagnetic radiation; electromagnetic waves are also given off by natural phenomena such as the sun and lightning.

Electromagnetic waves are thought to have existed since the beginning of the universe, but a scientific understanding of their existence and properties did not come until the early 19th century. In 1831, English physicist Michael Faraday discovered the phenomenon of electromagnetic induction, the creation of an electromotive force by the manipulation of a magnetic field. Scottish physicist James Maxwell (1831–1879) built on this discovery in his groundbreaking 1873 *Treatise on Electricity and Magnetism*, which described in four equations the temporal and spatial nature of electromagnetic fields. Maxwell proposed a new concept called "displacement current," which predicted the existence of electromagnetic waves. In 1888, German physicist Heinrich Hertz (1857–1894) proved the existence of these waves through his experiments.

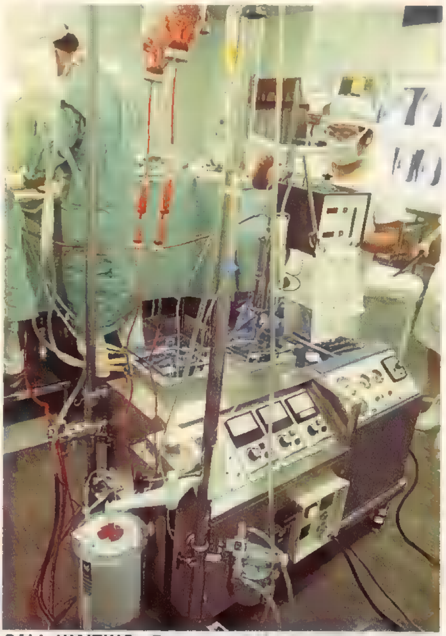
Electrical devices making use of the properties of electromagnetic waves include wireless communications, the telephone, radio, television, and microwave oven. Each of these devices gives off electromagnetic waves of different lengths and frequencies. Wavelength refers to the length of one wave cycle; that is, to the distance between successive wave crests. Frequency refers to the number of waves that pass a fixed point in one second. (Frequency is measured in Hertz; a frequency of one kilohertz means that 1,000 wave cycles pass every second.) The medium waves used for AM radio have a frequency of 300 to 3,000 kHz, while shortwave radio employs waves with a frequency of 3 to 30 MHz (megahertz). The microwaves used for mobile phones, satellite communications, and microwave ovens have wavelengths ranging from 300 MHz to 300 GHz (gigahertz).

THE BODY ELECTRIC

Though electromagnetic waves have no doubt played an important role in the development of modern society, they also have a downside. Devices that actively employ electric waves, such as radios and mobile phones, are not the only man-made sources of electromagnetic radiation. Like it or not, every device that operates on electricity produces electromagnetic waves, and there are genuine concerns that this electromagnetic radiation can cause damage both to the human body and to other electrical devices. Clearly, long-term exposure to electromagnetic waves in the X ray and ultraviolet ray spectrum causes physical damage to the human body. What is now becoming a concern is the potential adverse effects of long-term exposure to the ultralow frequency radiation generated by power lines, personal computers, and essentially all electrical devices, and to the microwave radiation generated by mobile phones and microwave ovens.

In Sweden, researchers have reported a high incidence of infantile leukemia and brain tumors among people living close to power lines. Lawsuits have been brought against mobile phone manufacturers in the United States by people who claim that electromagnetic waves from the phones caused brain tumors. Doubts about the safety of electromagnetic radiation are increasing; in many industrialized countries, plans to erect high-voltage power lines in residential areas have been met with vocal opposition. This June the World Health Organization announced that it has begun a five-year project to study the health effects of electrical devices that actively employ electromagnetic waves.

Microwave radiation, one form of electromagnetic radiation, causes molecules in the matter they pass through



PANA

CALL WAITING: ***Because of the interference they can cause with sensitive medical equipment, mobile phones are now banned in most Japanese hospitals.***

to vibrate, thereby producing friction and heat. In the case of mobile phones, the antenna that picks up and transmits microwaves is held very close to the user's head. Consequently, there are worries that microwave radiation at such proximity could affect the brain. Furthermore, nerve signals in the human body operate on low frequencies, so they may be affected by the low-frequency electromagnetic waves emitted by electrical devices, possibly disturbing the normal functioning and development of chromosomes or cells.

Currently, however, there is no hard and fast scientific proof that the electromagnetic waves generated by electrical devices have an adverse effect on the human body. If there are effects, scientists have yet to discover what levels of electromagnetic radiation present a danger or precisely what the effects on the body are. Epidemiological surveys and studies are urgently needed. Whatever the case, long-term exposure to powerful electromagnetic waves clearly presents a danger. It is therefore best to avoid long-term, close-range exposure to electrical devices that generate such waves. This is especially true for infants and pregnant women, who are particularly susceptible to electromagnetic radiation.

CROSSED SIGNALS

Electromagnetic interference, the effect that electromagnetic waves have on other electrical devices, is more easily observed and better understood than the effects they have on the body. Electromagnetic interference has been a persistent problem since the invention and proliferation of electrical devices began in the late 19th century. Italian physicist Guglielmo Marconi (1874–1937) developed wireless telegraphy in 1895 and successfully transmitted signals across the Atlantic in 1901. Recognizing the importance of this new form of communication, countries raced to implement their own wireless communications systems, first wireless telegraphy and then radio. The world's first commercial radio broadcast took place in Pittsburgh in 1920. This revolutionary method for transmitting information spread rapidly throughout the world. At the same time, however, electromagnetic radiation from electric lights, railroads, and factories began interfering with the reception of wireless transmissions and radio broadcasts.

In 1934, the International Electrotechnical Commission (IEC) formed a special committee to address the problem. The Comité International Spécial des Perturbations Radioélectriques (CISPR) was comprised primarily of British, French, Italian, and German representatives. The CISPR's goal was to protect general wireless communications and radio broadcasts from interference. It sought to accomplish this goal by setting international standards on electromagnetic interference. These standards—which addressed such issues as what levels of interference should be admissible and what equipment and methods should be used to measure it—contributed greatly to reducing electromagnetic interference.

However, the rapid proliferation of electrical devices following World War II once again brought the problem of electromagnetic interference to the fore. Initially, the biggest headache caused by electromagnetic interference was the disruption of electric-wave transmissions, particularly radio and television broadcasts. Today, however, with the use of complicated electrical devices a part of everyday life, another problem is becoming ever more pressing: electromagnetic waves generated by electrical devices and electric waves used in communications are causing malfunctions of computers and electronic control systems. Portable electrical devices, particularly mobile phones and CD players, can cause unforeseen problems. The use of CD players and laptop computers in airplanes, for example, can interfere with the plane's control systems, with potentially fatal consequences. In addition, mobile phones have caused electromagnetic interference with medical equipment. Several accidents have occurred in Japan when electromagnetic waves thought to have originated from a mobile phone caused transfusion pumps to malfunction.

The Council on Countermeasures for Nonessential Electric Waves—comprised of representatives from seven government ministries and agencies, including the Ministry of International Trade and Industry, the Ministry of Health and Welfare, and the Ministry of Posts and Telecommunications—conducted tests in 1995 on over 200 medical devices, including transfusion pumps, dialysis machines, and artificial respirators. The council's findings were released in April of this year. It was found that mobile phones with an output of 1W caused a breakdown or some malfunction with about 60% of the medical devices. Personal Handyphone System (PHS) telephones with an output of 80 mW (milliwatts) had the same effect on 4% of the devices. In the case of the mobile phones, the phone's antenna had to be within two meters of the equipment for the interference to be observed; for the PHS, the distance was less than ten centimeters. Based on this study, mobile phones are now banned in most Japanese hospitals.

The problems associated with electromagnetic interference will only increase, and there is a race on to develop electrical devices that neither create interference nor are affected by it. The concept is called electromagnetic compatibility (EMC). The European Union (EU) strengthened its regulations on EMC this January; products that do not bear the EU symbol identifying them as satisfying these regulations are no longer allowed on the EU market. EMC regulations are also being incorporated into the IEC's standards. In fact, the development of EMC regulations is a worldwide trend.

The creation of new EMC technologies to meet these standards will become more and more important in the future. Top priorities are the development of instruments to accurately determine the strength, type, and source of electromagnetic waves and the fabrication of materials that can protect sensitive electronics from interference by absorbing or reflecting electromagnetic waves. Ⓛ

The author is a professor of engineering at Tohoku Gakuin University and the president of Electromagnetic Compatibility Research Laboratories, located in Sendai. He graduated from the Faculty of Engineering at Tohoku Imperial University in 1944.

SOUNDING OUT THE OCEANS

A network of small, high-output transceivers developed by the Japan Marine Science and Technology Center will enable scientists to analyze changes in ocean makeup that have a direct impact on the global environment.

BY **TOSHIAKI NAKAMURA**

THE sea is intimately tied to a number of large-scale meteorological phenomena that greatly influence our everyday lives. The most well-known among these is probably the El Niño, an irregularly occurring flow of warm surface water along the western coast of South America that brings abnormally high rainfall to usually arid parts of the world.

Observation of mesoscale (10 to 1,000 kilometers in extent) ocean phenomena — such as the El Niño and warm-water and cold-water pockets (these can have a radius of 200–300 km)—cannot be carried out using conventional surveillance methods; it would simply take too many people too much time.

In 1979, American oceanographers Walter Munk and Carl Wunsh proposed ocean acoustic tomography as a new method of large-scale ocean observation. Their method adopted the principles of X-ray computerized tomography (X-ray CT). The prefix "tomo-" comes from the Greek word *tomos*, meaning section, or to slice, so ocean tomography involves slicing the ocean into sections in order to understand its internal structure. In medical X-ray CT, the difference in the absorption rates of X rays by different tissues and organs produces a cross-sectional image of the part of the body being scanned. In ocean acoustic tomography, sound waves take the place of X rays. Scientists can get a picture of water temperature and water-current velocity in a given section of the ocean by measuring the velocity of sound waves traveling through the water. In general, sound travels through seawater at the rate of 1,500 meters per second, so a 1,000-km area can be measured in a matter of around ten minutes.

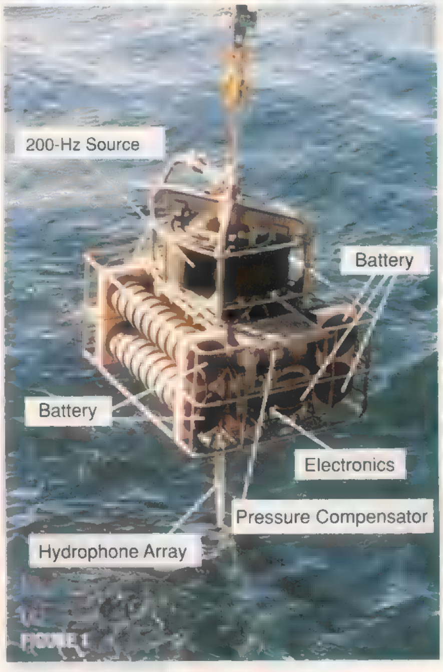


FIGURE 1

The acoustic tomography observation system incorporates transceivers made up of an underwater speaker, which emits sound waves, and an underwater microphone, which receives sound. Multiple transceivers are moored across a given area. By clocking the transmission times of sound waves along various paths between the transceivers, scientists can measure the distribution of water temperature and ocean currents.

Since there is less attenuation of sound waves at lower frequencies, there is an advantage to using low-frequency signals for these purposes. However, producing low-frequency sound requires large, heavy speakers. Furthermore, with longer, low-frequency wavelengths, wave resolution deteriorates. Taking these factors into consideration, the best frequency for distances of 1,000 km is around 200 Hertz.

The transmission rate of sound through seawater differs according to water temperature and pressure. In middle latitude waters such as those around Japan, sound travels slowest at depths of around 1,000 m. According to Snell's Law of refraction, sound waves are refracted toward the area where they travel slowest. Consequently, when sound waves are broadcast in various directions at depths of 1,000 m, the refracted waves travel along different paths, but without exception attempt to return to the ideal depth of 1,000 m from which they were broadcast. These waves are then picked up by the microphones of the other transceiver sets in the network. Sound waves travel at different speeds along their specific paths according to the water temperature and water-current velocities along those paths. Each time a microphone picks up a sound wave, the change in the speed of the wave is recorded. Solving simultaneous equations for all the sound waves gives the water temperature and water current for that cross section of the sea.

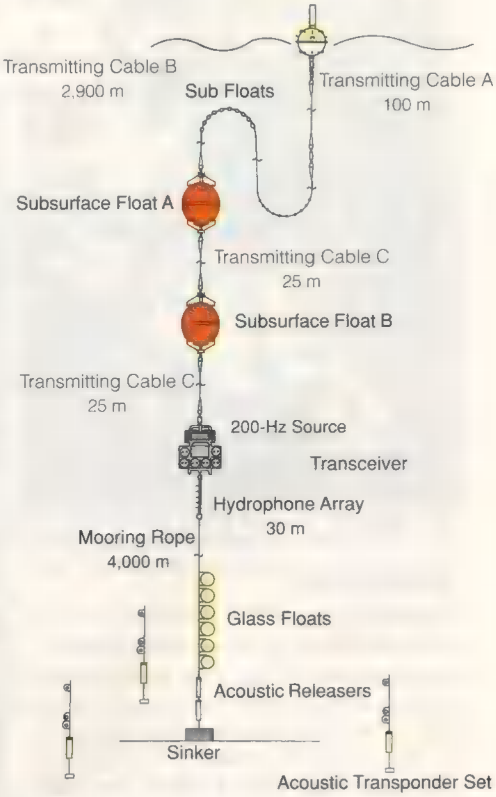


FIGURE 2

SEA BASS

Figure 1 shows the tomography transceiver developed in 1995 by the Japan Marine Science and Technology Center. A small-size, high-output speaker is required to produce sound-wave transmissions over distances of 1,000 km. This goal was realized through the development of a speaker made from a super-magnetostrictive material made of an iron alloy with a metallic element from the rare earth group (Terbium or Dysprosium). The material used in this speaker has a magnetostriction capacity (the ability of a ferromagnetic body to change its dimensions following changes in its state of magnetization) that is much greater than conventional magnetostrictive materials.

The sound-wave signal used is called an M-sequence signal. By using this signal, weak acoustic signals that have deteriorated over long-distance transmission and are hidden in noise can still be properly analyzed through signal processing.

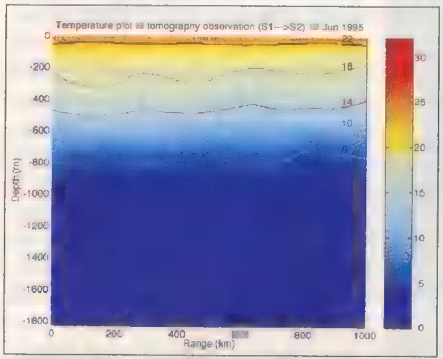


FIGURE 3: ***The x axis measures distance over 1,000 kilometers and the y axis shows ocean depth, providing water temperature data to a depth of 2,000 meters below sea level.***

The transceiver mooring system has a total length of 7,000 m. The transceivers are moored at a depth of 1,100 m with two subsurface floats (see Figure 2). Accurate measurement of transmission time is vital to the accurate inference of water temperature distribution. For this reason, a high-precision crystal clock is installed in the transceiver. The clock calibrates itself daily based on time signals from the GPS (Global Positioning System) satellite.

Having been processed within the transceiver, sound-wave data are sent to the surface buoy along the transmitting cables. They are then transmitted via the INMARSAT satellite to the KDD land receiving station in Yamaguchi Prefecture. From Yamaguchi, the data travels through packet telecommunications circuits to the Japan Marine Science and Technology Center in Yokosuka, near Tokyo, where they are analyzed.

In April 1995, two transceiver mooring sets were set up off the south coast of Shikoku (the smallest of Japan's four main islands) to test sound transmission over a 1,000-km distance. Instantaneous observation of a large area of the ocean in real time was achieved (see Figure 3). An eight-month observation experiment has been underway in equatorial waters of the western Pacific Ocean since April 1996. Currently, sound waves are broadcast every three hours and data is being smoothly transmitted. Three new transceiver mooring sets are currently being built, which will bring the total to five. In April 1997, real-time observation of the three-dimensional structure of the ocean will become possible through an acoustic tomography system using these five sets. Equipped with more accurate data provided by this system, scientists should be better able to understand the connection between changes in the global environment and the action of the sea. LJ

The author is assistant senior scientist at the Japan Marine Science and Technology Center. Born in 1949, he graduated from the Faculty of Engineering at Osaka University.

SCI-TECH NEWS

Ideal dome exhibition

An experimental underground dome, constructed to a depth of approximately 80 meters beneath Sagamihara City, Kanagawa Prefecture, was opened to invited guests and the press on May 30.

Construction of the dome, which has a height of 12.5 meters and a diameter of 20 meters, began in 1994 as part of the Geodome Project undertaken by the Ministry of International Trade and Industry's Agency of Industrial Science and Technology. The purpose of the project is to provide data for the possible future construction of large-scale dome-shaped spaces—for potential use as garbage treatment centers or power generating plants—beneath the extensive utility and subway networks of Japan's urban centers.

This year scientists will investigate the dome's environmental features, among them its acoustic characteristics and its ability to withstand earthquakes. **RI**

SANKEI

DATA BOX SCI-TECH

Blue Planet Prize Every year since 1992, the Asahi Glass Foundation has awarded the Blue Planet Prize to individuals and organizations who have made substantial contributions to global environmental research.

This year the prize has been awarded jointly to Dr. Wallace S. Broecker, Professor of Geology at Columbia University, and to the M.S. Swaminathan Research Foundation of India. At a ceremony to be held on October 31 in Tokyo, the laureates will each receive ¥50 million ($450,000), in addition to a certificate of merit and a trophy.

Dr. Broecker has for many years been recording levels of carbon dioxide and other chemical elements and isotopes in the oceans, thereby contributing to our understanding of chemical cycles in the seas. In the mid-1980s, he identified the presence of the great ocean-circling current (now known as "Broecker's Conveyor Belt") that envelops the earth, extending from the North Atlantic and circulating through the Indian and Pacific Oceans. By demonstrating that the earth's climate is influenced by the oceans' currents, he pioneered an entirely new outlook on environmental research.

The M.S. Swaminathan Research Foundation is a nonprofit organization founded by Dr. M.S. Swaminathan in July 1988 with the goal of promoting research and activism to further rural and agricultural development through environmentally sustainable and socially equitable means.

Based on its research into vegetation, soil salinity, and other aspects of mangrove habitats, the research foundation has taken steps to restore degraded wetlands. By promoting sustainable agroforestry and aquaculture, and techniques that employ organic fertilizers, the foundation has helped to establish integrated coastal management systems that can provide an ecologically sustainable livelihood for coastal communities.

The foundation is also studying ways to rescue endangered plant species from extinction, improve the breeding of crops and medicinal plants, and manage microorganisms that improve soil fertility. **RI**

WASTE NOT, WANT NOT

Introducing a new series on Japan's innovative recycling technologies.

BY **YUTAKA SUZUKI**

THERE are a number of reasons why recycling is a hot issue in Japan, and why public and private organizations are investing ever more time and money in it. Not the least significant of these reasons stems from the fact that Japan is the world's second largest economy and that the bulk of its massive industrial production and 125 million population are concentrated in an area the size of Montana: sheer volume of waste.

Each year, a combined total of roughly 24 million air conditioners, television sets, refrigerators, and washing machines hit the market in Japan, and each year 14 million of these appliances are thrown away. Together, the above four appliances account for 1% of the 50 million tons of household waste produced in Japan each year.

In an effort to do something about these enormous quantities of household waste, the Japanese government passed a comprehensive new piece of legislation in 1991 called the Law for the Promotion of Using Recycled Resources, commonly known as the Recycling Law. The government strengthened the scope of this legislation last year when it passed the Packaging Recycling Law. These laws are the cornerstone of a society-wide bid to promote recycling in Japan.

PANA

PET CEMETERY: ***Citizens of Higashimurayama in Tochigi Prefecture collect and deliver for recycling up to 80% of the polyethylene terephthalate (PET) bottles they use each month.***

The Recycling Law stipulates that air conditioners, television sets, refrigerators, and washing machines must be designed with a view to easy recyclability. The legislation regulates both materials and methods of construction.

An October 1991 revision of the Law for the Treatment and Disposal of Waste Products (1970) stipulates that "businesses are responsible for the proper treatment of waste products generated in their business activities." In March 1995, large-screen televisions (over 25 inches) and large-volume refrigerators (over 250 liters) were designated as "waste products that—in instances when local governments are unable to collect and dispose of them—must be collected and disposed of jointly by their manufacturers and distributors."

Today, just under 60% of all end-of-use electrical household appliances are recycled. Iron and iron alloys account for the bulk of materials that are reclaimed. However, the amount of plastic used in household appliances is increasing every year, in direct proportion to a drop in the use of iron and iron alloys. This trend is problematic because plastics are comparatively more difficult to recycle.

In March 1995, the manufacturers and distributors of electrical appliances jointly created a cooperative organization for the proper disposal of their products, supporting and supplementing local governments' disposal activities.

The national government is also promoting a number of projects through which it hopes to increase the recycling of electrical appliances and their components. For example, since 1992 the New Energy Development Organization (NEDO) has been working with the nonprofit Engineering Advancement Association of Japan on the research and development of a total recycling system that employs supercooling in the low-temperature decomposition of waste products. Subsidized by the Ministry of International Trade and Industry (MITI), the system, located in Hitachi, Ibaraki Prefecture, can dispose of one ton of used refrigerators, washing machines, and television sets per hour. In addition, the Association for Electric Home Appliances has begun its own MITI-subsidized project for the development of a system that will completely recycle end-of-use household appliances.

REPACKAGING PLASTIC

Japan's total plastic production in fiscal 1993 was 12.2 million tons, 65% of which was composed of polyethylene (PE), polypropylene (PP), polystyrene (PS), and polyvinyl chloride (PVC). As in other countries, some 35% of plastics used in Japan are employed in packaging.

Plastic waste in 1993 was estimated at 7.6 million tons. Of this, only 9% was recycled. In the same year, approximately half of all plastic waste was incinerated, and of that, 1.2 million tons, or 16% of the total waste, was used for power generation and waste heat recovery. The 3 million tons that were not incinerated went into landfills.

Plastic goods that are used for one or two years and then thrown away account for some 22% of all plastic waste. Many of these products, such as the plastic films used for greenhouses, or for the Styrofoam boxes used in fish packaging, are relatively easy to collect in large volumes.

With the goal of recycling all of the vinyl film used for agricultural purposes in Ibaraki Prefecture, the Ibaraki

Prefecture Horticulture Recycling Center opened two treatment plants in June 1995, each of which aims to recycle 5,000 tons of film per year, breaking it down into powdered vinyl for use in the manufacture of flooring material.

At the Yokohama Central Wholesale Market, used Styrofoam packing boxes are pelletized on the spot and sent abroad to be turned into video cassette cases and other products. This practice is taking off at other wholesale fish markets around the country, too.

In another example of private initiative, citizens of Higashimurayama in Tochigi Prefecture (population 140,000) have been involved in the recycling of PET (polyethylene terephthalate) bottles since April 1994. Twice a month, a compacting truck comes around to collect the bottles from households, and these are then sent to a recycling company which turns them into plastic pellets. Ten tons of the bottles are collected per month—a collection rate of 80%.

Many companies in Japan are developing and testing technologies for converting waste plastic into a type of fuel oil through thermal cracking. For example, Mobil Oil and the Hokkaido Industrial Research Institute are conducting joint research into a thermal cracking process that employs a zeolite catalyst. Based on this research, Fuji Recycle in Hyogo Prefecture built in 1994 an experimental plant with the capacity to treat 500 tons of waste per year. The plant uses waste plastic from domestic distributors and from Germany's Duals System Deutscheland as a raw material.

In Germany, progress is being made in experiments to convert waste plastic into a reduction gas that is used in the iron manufacturing process. In Japan, NKK has announced plans to use waste-plastic pellets to produce some of the reducing agent that is used in manufacturing iron from iron ore at its Keihin Plant in Kanagawa Prefecture, which produces 330,000 tons of pig iron per day. Ten kilograms of plastic are used per one ton of steel. NKK plans on using 90 tons of plastic per day, or 30,000 tons per year.

PANA

ANY OLD IRON? ***Scenes like this are now quite rare in Japan thanks to strict new legislation on recycling and an increase in public awareness of waste issues.***

THE HEAT IS ON

Incineration is one method for disposing of waste products. Most countries also have facilities for thermal recycling, in which waste is not merely incinerated, but the heat generated in the incineration process is recovered for use in industrial and domestic heating and in electric power generation. Approximately 75% of the 50 million tons of waste produced by Japanese households is incinerated. Luxembourg incinerates about the same percentage of its waste, but it only produces 180,000 tons of waste per year. Other countries with a high percentage of incineration are Switzerland (59%) and Belgium (54%). At the end of 1993, there were 122 waste treatment facilities in Japan that used excess heat from the incineration process to generate electricity. This corresponds to around 33% of the total volume of incinerated waste. However, the average efficiency of electric power generation by waste incineration is low; only 5% of the total heat produced by incineration is actually reclaimed. Research projects are being carried out—mainly by NEDO—on the high-efficiency use of heat energy from waste incineration.

In urban areas, waste heat is generated by a variety of human activities other than incinerating waste. For example, heat from the waste water that flows beneath the city streets can also be used. In Japan, as in many Northern European countries, sewage treatment plants in major cities such as Tokyo—at the Koraku Pump Station, for example—are set up so that heat from waste water can be used for district heating and cooling.

The loss from resistance that occurs when electric power is transmitted through power lines is another form of waste heat. In Japan, the waste heat from interior and underground substations and underground power lines is being used for local heating. In the Hikarigaoka area of Tokyo, waste heat from a garbage incinerator and from underground ultrahigh-voltage power transmission lines is being used as the main heating source for 12,000 homes and commercial facilities.

In Sapporo, Hokkaido, waste heat generated by trains, lights, and people in downtown subway stations is recovered and used for heating. In Hitachi, Ibaragi Prefecture, waste heat from a cement factory is being used for heating and cooling in the area around Chuo Station.

As you can see, recycling efforts in Japan are innovative and varied, and often stem from private initiative. The articles that follow in the coming months will explain in detail how many of the above efforts came into being, and how they will contribute to a cleaner, less wasteful society in the future.

The author is dean of the Faculty of Engineering at Osaka University and director of the university's Cooperative Research Center for Advanced Science and Technology. He earned his Ph.D. in Engineering from the same university in 1967.

RUBBISH!

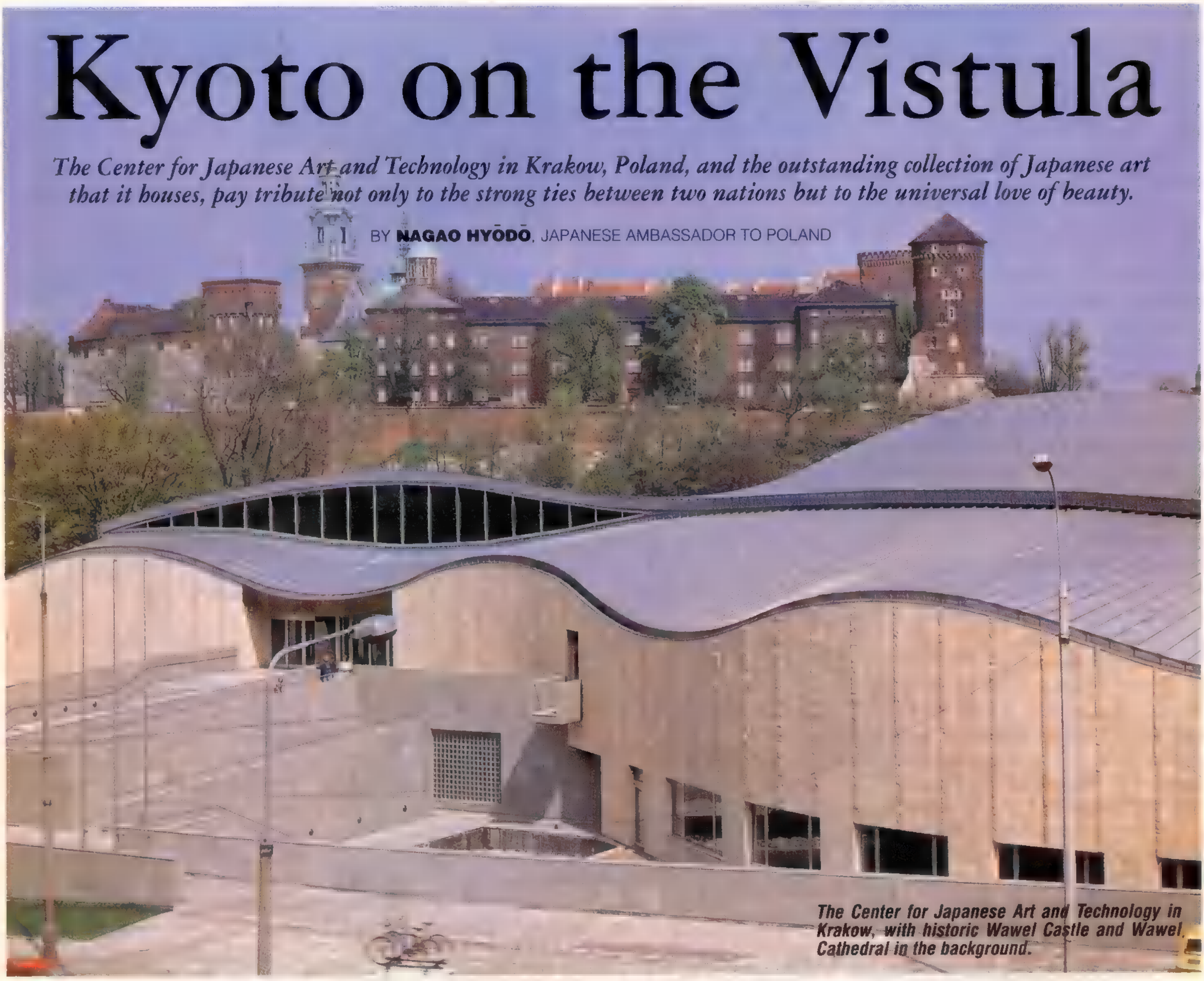
Household waste	**50 million tons**
Household appliances	**620,000 tons**
Color television sets	**130,000 tons**
Refrigerators	**200,000 tons**
Washing machines	**90,000 tons**
Air conditioners	**90,000 tons**
Industrial waste	**3.1 billion tons**

Source: The Association for Electric Home Appliances (1990)

Kyoto on the Vistula

The Center for Japanese Art and Technology in Krakow, Poland, and the outstanding collection of Japanese art that it houses, pay tribute not only to the strong ties between two nations but to the universal love of beauty.

BY **NAGAO HYŌDŌ**, JAPANESE AMBASSADOR TO POLAND



The Center for Japanese Art and Technology in Krakow, with historic Wawel Castle and Wawel Cathedral in the background.

KATSUAKI FURUDATE

KRAKOW—the cultural and historical capital of Poland—is a beautiful city known for its numerous Gothic and Renaissance buildings, which have somehow survived the ravages of war and time. On Wawel Hill, overlooking the Vistula River, are the Royal Wawel Castle, construction of which began in the 13th century, and Wawel Cathedral (completed in 1359), where for centuries Polish kings were crowned. Since 1994, the city has had yet one more cultural asset of which to boast: the Center for Japanese Art and Technology. Situated in a prime location across from Wawel Hill, the Center's main building is shaped in soft, flowing curves that suggest the meandering path of the Vistula, which flows through the center of the city. Though of a modern design, the building is not at all out of place in this ancient city.

The Center, which is officially part of the Krakow National Museum, opened on November 30, 1994, with a ceremony that was attended by many dignitaries and leading citizens of both Poland and Japan. Former Polish president Lech Walesa and His Imperial Highness Prince Takamado of Japan cut the ribbon. It was the first time in history that a member of the Japanese imperial family had visited Poland, and the ceremony was carried out with all the decorum and pageantry befitting such an occasion.

The primary mission of the Center for Japanese Art and Technology is to exhibit one of the city's most unlikely assets—its superb collection of over 10,000 Japanese artworks, the largest of its kind in Eastern Europe. Most of the pieces were originally part of the Feliks Jasienski Collection. In addition to the galleries, the Center boasts a multipurpose hall suitable for lectures and concerts, an audio-visual room, facilities for preservation and restoration, a library, a museum store, and a Japanese tea shop, which is particularly popular with students and young people in general. In the year and a half since its opening, the Center has become a local landmark and a popular place of recreation and education.

The multipurpose hall has been used for the Center's own seminars, concerts, and cultural events and as a venue for a variety of events cosponsored with other institutions, including traditional Japanese music concerts, performances of *kyōgen* (comic drama), and lectures on and demonstrations of Noh, calligraphy, and origami. In October this year, the Center will cosponsor, together with the Japan Foundation, an exhibition of contemporary Japanese posters. It is also preparing for an ukiyo-e exhibition to be held in 1997 in commemoration of the 200th anniversary of the birth of master artist Utagawa Hiroshige (1797–1858). The Center has expanded its activities over the last year and a half and has started to attract visitors from all over Europe.

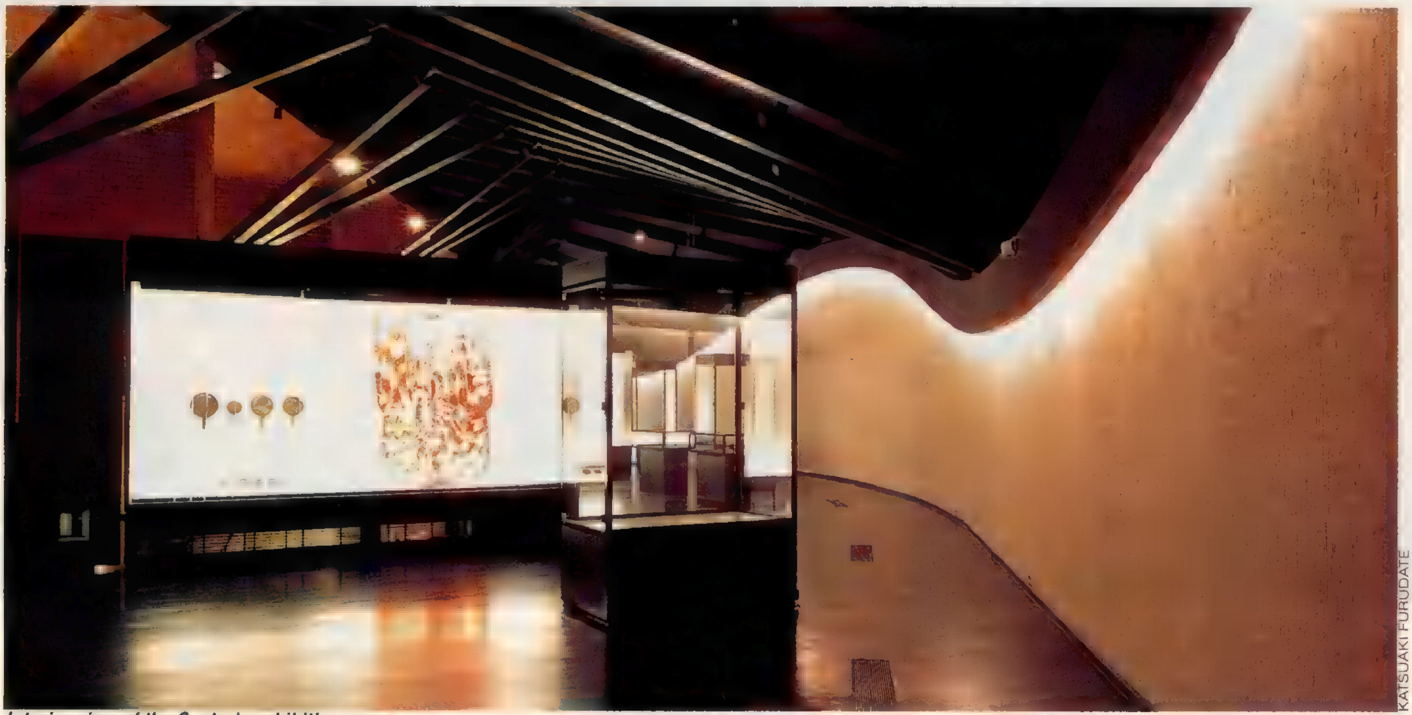
Though the construction of the Center took only a few years, the story of its creation spans almost a century. The fact that it was built at all is testimony to the goodwill and friendship between the people of Poland and Japan.

COLLECTORS AND PROTECTORS

The story begins with the Polish nobleman Feliks Jasienski (1861–1929), who dedicated his life and fortune to collecting Japanese art. The son of a wealthy landowner in eastern Poland, Jasienski was educated in the arts from an early age. He became the quintessential bohemian, a free spirit devoted to art and literature. After studying in Paris in the 1880s, he embarked on a career as a critic and collector. Japanese art, particularly ukiyo-e, was all the rage in fin de siècle France, spawning an artistic movement in Europe known as *Japonisme*. It was through this movement that Jasienski came to know and love ukiyo-e, which he began to buy from Parisian art dealers and at auctions. His passion for collecting, and for Japanese art, knew no bounds.

COURTESY OF KODANSHA

Feliks Jasienski (1861–1929), the eccentric Polish nobleman whose collection of 6,500 works of Japanese art forms the heart of the Center's collection.


KATSUAKI FURUDATE

Interior view of the Center's exhibition space.

In February 1901, Jasienski organized the first exhibition of Japanese art ever to be held in Poland. Speaking to his efforts to acquaint his countrymen with Japanese art, Jasienski once wrote, "Japanese art is so utterly different from anything we in the West have seen. Like Greek art, however, it occupies a high place in the history of world art. I want to introduce this art to the people of Poland." Yet despite his noble intentions, the exhibition was a complete failure. The people of Warsaw, where the exhibition took place, did not understand what they were viewing, and Jasienski—who was thought to be somewhat of an eccentric—was ridiculed by critics and the public alike.

Film director Andrzej Wajda (front, second from right); his wife, actress Krystyna Zachwatowicz (front, left); and architect Arata Isozaki (back, second from right) played key roles in realizing Jasienski's vision for the Center.

In 1920, Jasienski cut his ties with the city, which was then under Russian rule, and moved to Krakow, which was politically more free and more accepting of new art. There he continued his attempts to promote Japanese art and began to dream of a museum to house and exhibit his collection. But this was not to happen in Jasienski's lifetime. The aging Jasienski lost his sight and the dream was deferred.

The collection that Jasienski amassed contains over 6,500 pieces of art, including ukiyo-e prints, paintings, sculpture, arms, lacquerware, ceramics, and textiles. The heart of the collection is its 5,000-odd ukiyo-e prints, 2,000 of which are by Utagawa Hiroshige. Jasienski offered to donate the collection to the Krakow National Museum the year he moved to the city, but the museum was not able to accept the donation until after his death in 1929. Because the museum lacked adequate exhibition space, however, the people of Poland rarely had the opportunity to view the collection. Nevertheless, many dedicated people recognized the collection's value and worked hard to protect it. The most enthusiastic among its guardians was Professor Zofia Alberowa, who asked to be given charge of preserving the collection after seeing the neglect that it had been subjected to and thereafter spent her life studying and writing about it.

ANDRZEJ WAJDA AND THE DREAM FULFILLED

In 1944, the Sukiennice Gallery in Krakow held an exhibition of Japanese art. At that time, the country was being occupied by Germany, and Japan was an Axis nation. Part of the Jasienski Collection was included in the exhibition.

It was through this exhibition that an eighteen-year-old student at the Academy of Fine Arts in Krakow came to see Japanese art for the first time. That student, Andrzej Wajda, would go on to become one of the masters of Polish cinema, directing such critically acclaimed films as *Ashes and Diamonds* (1958), *Man of Iron* (1981), and *The Ring with the Crowned Eagle* (1992). Recalling the exhibition, Wajda once said, "I had never seen anything so bright, light, and orderly—and yet possessed of such a sense of harmony. It was the first time in my life that I had ever come into contact with real art." The exhilaration that Wajda felt that day never left him and inspired him to take on the responsibility of completing Jasienski's lifework by building a museum to house the collection.

Lower-Class Woman, *from the* **Connoisseurs of Contemporary Women in Daily Life** *series by Kitagawa Utamaro (1753–1806); 38.2 cm x 26.8 cm.*

BOTH COURTESY OF KODANSHA

The Moon Reflected in Rice Paddles at Sarashina, Shinano Province *by Utagawa Hiroshige (1797–1858); 37.3 cm x 75.6 cm. (Both paintings from the Center's collection.)*

In November 1987, Wajda won the Inamori Foundation's Kyoto Prize, with its purse of ¥45 million ($407,000). At the awards ceremony, he made an unexpected announcement. "What moves and excites a person in his youth has the strongest and longest lasting impact on his life. ... I want other people to feel the joy that I felt on first viewing these masterpieces of traditional Japanese art. I will therefore donate the purse from the Kyoto Prize to the Krakow National Museum, to be used in building a center to house its Japanese collection. ... By so doing, it is my hope that this prize will serve not only as a bridge between Japan and Poland, but ... between the 20th and 21st centuries." (Summarized from the Japanese translation.)

Wajda's great generosity impressed many people in both countries. Together with his wife, the noted stage actress Krystyna Zachwatowicz, he established the Kyoto-Krakow Fund to collect moneys for the project. They then enlisted Toshikuni Yahiro, chairman of the Japan-Poland Economic Committee, to oversee the fund and the construction of the museum. He was assisted by Wajda's longtime friend Etsuko Takano, general manager of the Iwanami Hall movie theater in Tokyo, who had made a career of introducing masterpieces of world cinema to audiences in Japan, and by literary critic and popular radio talk show host Chieko Akiyama.

Takano took the initiative by organizing a grassroots fundraising campaign based at her theater. Akiyama played a key role in publicizing the campaign when she donated her winnings from the Kikuchi Kan Prize, which she received in honor of her 10,000th broadcast. Akira Matsuzaki, chairman of the East Japan Railway Workers' Union, heard of the campaign and enlisted the support of union members, ordinary citizens, the railway, and its affiliates. Through the union's efforts, approximately ¥120 million ($1.1 million) was donated to the project. The grassroots campaign was far more successful than anyone had dared hope; in all, some 138,000 people contributed ¥250 million ($2.3 million) to the fund.

The Japanese and Polish governments also gave their full support to the project, including financial assistance. The final sum raised was slightly more than ¥500 million ($4.5 million). In addition, renowned Japanese architect Arata Isozaki agreed to design the building free of charge, and Ikuo Hirayama, a noted Japanese artist and art historian, volunteered to assist in the restoration work.

Meanwhile in Krakow, the director of the National Museum, Tadeusz Chruscicki; the mayor of the city, Jozef Lassota; the governor of Krakow Province, Tadeusz Piekasz; and many other people were lending their support to the project. Most notably, the city generously provided the site across from Wawel Castle.

Architect Arata Isozaki says of his concept for the building, "Just as the Jasienski Collection transcended Japan's borders, so this building seeks to transcend traditional notions of Japan. I hope the building will take root in the Polish soil." Thanks to the Center and all who labored to see it completed, one man's love for Japanese art almost 100 years ago has borne fruit in the close ties between the Polish and Japanese people today. LJ

The author has served as Japan's ambassador to Poland since 1993. He entered the Ministry of Foreign Affairs after graduating from the Faculty of Law at the University of Tokyo in 1961.

LAUGHING A SIEGE TO SCORN

"Hang out our banners
on the outward walls;
The cry is still, 'They come';
our castle's strength
Will laugh a siege to scorn."
—William Shakespeare, Macbeth

BY **KEVIN RAFFERTY**

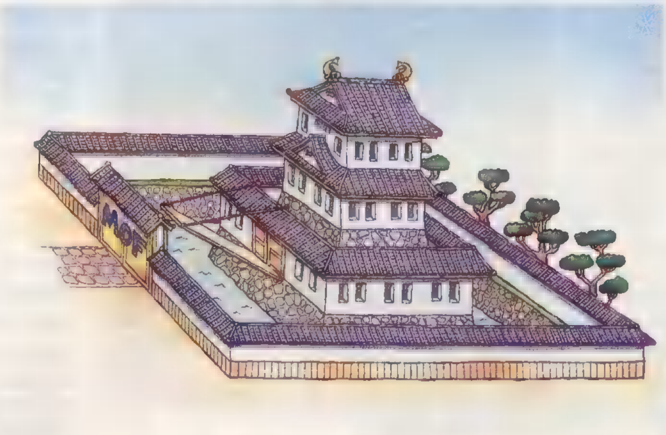
NOTHING better symbolized the crisis than the great entrance gates of the institution. For weeks they were bolted firmly shut, policemen anxiously patrolling their perimeter for good measure. Japan's Ministry of Finance (MOF), under fire for the financial and economic mess that the country now finds itself in, was an institution in obvious fear.

MOF officials had been left in no doubt about the public's fury. In January, a motorist deliberately crashed his car into a central government building. Climbing out to give himself up, he looked about in confusion and then confessed to arriving police, "I thought this was the Ministry of Finance." From mid-January until the end of March, there were frequent protests outside the MOF building. And so the iron gates closed shut.

The worst of the storm appears to have blown over, and the main gates are once again open. Yet the questions remain about the future of the ministry that was once the undisputed and highly praised mastermind of Japan's "miraculous" rebirth from the ashes of World War II.

The charges against the ministry and its mandarins range from mismanagement and incompetence to outright corruption. It is accused of presiding over the end of the famed economic miracle, which has left the country sputtering between low growth and no growth, with the rising specter of Western-style unemployment. It has been blamed for the whopping bad debt that is crippling the entire financial system and stunting the growth not only of Japan's economy but of the global economy as well. At its peak, total bad debt may have swelled to anywhere between ¥50 trillion ($45.2 billion) and ¥80 trillion ($72.3 billion); no one knows for sure because of Japan's obscure accounting practices, and because both the MOF and the nation's banks have been reluctant to own up to the full extent of their insolvency.

Equally damaging was the revelation that several high-ranking MOF officials had illegally accepted gifts and used political office as a front for private affairs. For an institution that has always taken pride in its rectitude, this was a tremendous blow.



TOSHIKAZU HAGA

But the spark that finally turned smoldering resentment into public hostility was the decision in December 1995 to use more than ¥685 billion ($6.2 billion) of public funds to help bail out seven bankrupt *jusen* (housing loan companies). Bad debt on the jusen's books had piled up to ¥9.6 trillion ($86.8 billion)—74% of their holdings.

MOF officials grumble—with some justification—that they should not be blamed for the jusen fiasco because the jusen had disregarded the ministry's repeated warnings to all lending institutions not to overextend themselves. Instead, the jusen strayed recklessly from run-of-the-mill home mortgages into loans for luxury condominiums, holiday resorts, and golf courses—just when the "bubble" economy was being pricked and property prices began to fall.

The main suppliers of funds to the jusen were the politically well-connected agricultural cooperatives, who answer not to the MOF but to the Ministry of Agriculture, Forestry and Fisheries. A friend of mine at the MOF argues ingeniously, if ingenuously, that "this is an argument for the Ministry of Finance to have *more* power, not less as the critics contend, so that we can have complete control of the entire financial system."

The legion of critics has not been impressed with such rationalizations. Chief Cabinet Secretary Seiroku Kajiyama has remarked that, "The finance ministry is not well-suited to the times. … It should be reformed to meet international standards." More trenchant critics assert that the MOF should be broken into at least three separate bodies. One would oversee the securities market, another would deal with taxes and revenues, and a third would handle broad economic and financial policy.

MOF officials are fighting a rearguard action, claiming that a breakup is unnecessary and hoping that with time the problems will just go away. It is possible to argue, however, that even a breakup of the MOF would not be sufficient. The public's trust in the MOF and its officials must be restored, and that means bringing more openness and accountability to the ministry. Part of the problem is that the MOF makes what are essentially political decisions that in most other countries would be the responsibility of a cabinet minister. In the absence of political control, MOF officials must recognize the need for greater procedural transparency.

Next, the practice of *amakudari*, whereby officials "retire" to top posts in private industry, often in companies that they have just finished supervising, should be re-examined. It would also be prudent to insist that anyone who rises to the rank of bureau chief must have substantial foreign experience. Traditionally, "internationalists" within the MOF have been regarded as suspect and kept at arm's length from the main hierarchy. Japan's interests in the world will increasingly be best served by people who know what is going on outside.

Above all, officials at the ministry should strive for humility. Given the tremendous complexity of international finance in our times, trying to understand global markets, police the financial sector, and formulate well-informed, long-term economic policies—all at the same time—calls for the omniscience of God. Can any mandarin be so boastful?

The author is editor in chief at International Media Partners, which produces daily newspapers during annual meetings of the World Bank, the International Monetary Fund, and the regional development banks. He is also the author of *Inside Japan's Powerhouses*, a study of Japan's experience with internationalization published last year by Weidenfeld and Nicolson.

· FROM THE HEART ·

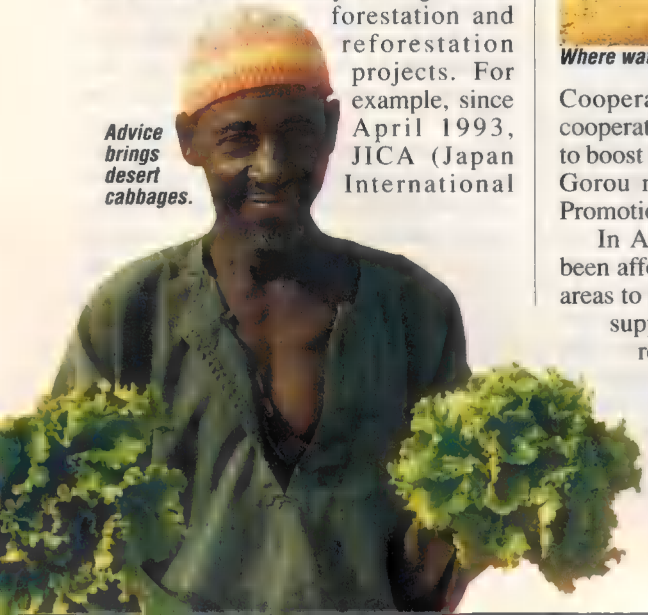
African Green

Japanese volunteers are helping to turn back the tide of desertification in the Sahel region of northern Africa.

DESERTIFICATION is a widespread environmental problem that directly affects over 100 countries in all the inhabited continents. It occurs when productive land in dryland regions is degraded by human activities and by climate variations such as prolonged drought. According to a 1991 survey by the United Nations Environment Programme (UNEP), desertification affects one sixth of the world's population (900 million people) and one quarter of the total land area of the earth (3.6 billion hectares). By some estimates, six million hectares (ha) of productive land are turned to desert every year, exacerbating such problems as climate change, loss of biodiversity, famine, and poverty.

In June 1994, representatives of 87 countries met in Paris to sign the United Nations Convention to Combat Desertification. The convention (now signed by over 100 countries) aims to prevent desertification through the implementation of both national and regional measures. To pursue this goal, the convention stresses the importance of cooperation among national and local governments, indigenous peoples, and nongovernmental organizations. It also commits developed countries to cooperate in "the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification ..." (Article 4).

Niger's rough terrain.


Advice brings desert cabbages.

Japan has been providing financial and technological support to fight desertification in Asia and Africa since the mid-1970s, mainly through local forestation and reforestation projects. For example, since April 1993, JICA (Japan International Cooperation Agency) has worked in cooperation with the Republic of Niger to boost levels of greenery in the Kareye-Gorou region through the Project for Promotion of the Green at Kareye-Gorou.

In Africa, 73% of arable land has been affected by desertification, in some areas to the point where it will no longer support crops unless these areas are restored. The problem is particularly serious in the Sahel region of northern Africa, where rainfall levels have declined by 20-40% in recent decades and the land has been severely degraded. The Sahel region stretches from Mauritania in the west to Chad in north central Africa. The arid Sahara lies to the north and wetter tropical areas to the south.

Says Kan Yamato (49), technical advisor on the environment to the Niger government, "Climate variations play a key role in promoting desertification in the Sahel, but the main cause is agricultural mismanagement and farmers' inability to adapt to change."

A gardener by trade, Yamato signed up as a JOCV (Japan Overseas Cooperation Volunteers) member at age 33. He was dispatched to Rabat, the capital of Morocco, where he worked for three and one half years, planting trees along the roads and in the parks. At age 39, Yamato returned to Africa, this time to Thies Province in Senegal, where for five years he led a verdure promotion project, cultivating young plants and distributing them to local residents.

Where water is a treasured commodity.

In mountainous Japan, arable land is extremely limited, and farmers have for many years attempted to increase production on their lots without decreasing the fertility of the soil. In the Sahel region of Africa, few such efforts have been made. Africa used to be blessed with great swathes of arable land, but because the idea of land ownership was not established, farmers would abandon a plot of land if it was not immediately productive, rather than attempt to nurture it. Now, with the spread

Desertification in action. (A typical Sahel region landscape.)

of desertification, rapid population growth, and the establishment of land ownership, the amount of arable land is gradually decreasing. Moreover, farmers still lack the skills to make good use of it.

Combating desertification is no easy task. Before Yamato arrived in Niger, one international organization had planted trees alongside the edge of one stretch of desertified land in a bid to prevent its expansion. Although the organization paid villagers for their help in planting the trees, once the organization had departed, the local residents started to cut them down. As Yamato points out, "A project that has no obvious beneficiaries is meaningless."

The JICA project in which Yamato is currently involved attempts to combat desertification by improving local people's livelihoods, levels of education, and understanding of land management methods. The project aims, through the transfer of agricultural skills, to enrich the land while simultaneously reducing pressure on the environment. Says Yamato, "It is very important that farmers cultivate and manage their land with a view to preventing desertification."

A JOCV member instructs.

With the help of JOCV members, Yamato has taught farmers how to cultivate vegetables such as cabbages, tomatoes, and onions. This has improved both nutrition and income levels. If farmers can earn enough money to survive on the land, the theory goes, they will not abandon their fields to work in the city. Yamato has also encouraged farmers to plant protective hedges around the land they use to cultivate millet and along the roads as feed for their livestock.

The key factor in the success of this project has been the participation of the local farmers and villagers. By investing their own energy into the project, local people have a greater sense of self-reliance and of responsibility for the future of their land.

Yamato concludes, "The work that we are doing here may not be as conspicuous as, say, greenbelting projects in the desert, but I do think this is important work toward the long-term goal of preventing desertification." ⓛ

BY **OSAMU SAWAJI**

DATA BOX
CULTURE

■ **Shades of Okinawa** On a quiet residential street in Komaba, Tokyo, there stands a large, traditional Japanese-style building with white walls and a black tiled roof. The handsome structure would be worth a visit even if it didn't house Japan's premier collection of folk art. The Japan Folk-Craft Museum (Nihon Mingeikan) was founded in 1936 by philosopher and art lover Sōetsu (Muneyoshi) Yanagi (1889–1961), leader of the folk-craft movement. The museum's collection consists of 10,000 pieces of folk art gathered from across the country.

To commemorate its 60th Anniversary, the museum is holding a special exhibition from June 29 to September 23. Entitled *People's Art of Okinawa: The 60th Anniversary Celebration*, the exhibition features 300 works of Okinawan folk art—a field in which Yanagi was particularly knowledgeable. Yanagi made his first of four visits to Okinawa in 1938 to study and collect pottery, textiles, and other objects. Through his field research, his museum, and his essays, he did much to introduce Okinawan culture to mainland Japanese.

The folk art of Okinawa is strongly influenced by the island prefecture's geography. Located at the southwestern end of the Japanese archipelago, Okinawa has a semi-tropical climate unique in the nation. Moreover, the area long prospered as a center for trade with neighboring China, Korea, and Southeast Asia, particularly between the 14th and 15th centuries.

Okinawa's surface-dyed and woven textiles are notable for their bright colors and beautiful designs. This is especially true of the gorgeous *bingata* surface-dyed fabrics. Although *bin* normally means "red" (*gata* meaning "stencil"), in this case it denotes a wide range of brilliant colors, including red, yellow, and indigo blue.

The anniversary exhibition features kimono and *furoshiki* (square wrapping cloths) decorated in a variety of surface dying techniques, as well as textiles with handwoven designs made from such materials as silk, cotton, abaca, and hemp. The exhibition also includes an assortment of ceramics, shisa (lion-shaped roof ornaments), lacquerware, and baskets.

For information on upcoming exhibitions, contact the Japan Folk-Craft Museum at (tel.) 81-3-3467-4527 or (fax) 81-3-3467-4537. An exhibition of 150 works from the museum's permanent collection has been on a four-city tour of the U.S. since June 1995. Entitled *Mingei: Two Centuries of Japanese Folk Art*, the exhibition will be in Fort Worth, Texas (its last stop), from September 12 to January 5. For more details, contact the Fort Worth Museum of Science and History at (tel.) 1-817-732-1631 or (fax) 1-817-732-7635. **KA**

COURTESY OF THE JAPAN FOLK-CRAFT MUSEUM

A *GINKŌ* BY ANY OTHER NAME

Japan's obscure system for naming financial institutions may be encouraging both bankers and their customers to accept a lower standard of accountability than is prudent.

BY **SHŌICHI RŌYAMA**

TO other countries, and particularly the United States, it may seem that there are so few banks in Japan that the Ministry of Finance (MOF) should have no problem at all overseeing them. Therefore, some foreign observers conclude, there must be something wrong with the MOF's oversight procedures for bank failures to be so commonplace. At face value, the statistics would seem to bear out the supposition that Japan has few banks. The Bank of Japan has long used the term "all banks" in its reports, referring to a group of 150 institutions. (Except where noted, all figures for Japanese financial institutions cited in this article are as of March 1996). By contrast, there are well in excess of 10,000 commercial banks in the United States, with an additional 3,000 or so S&Ls and savings banks.

What many foreign observers do not realize is that the Bank of Japan's figure provides an incomplete picture of the banking sector in this country. There are some institutions in Japan that are in fact banks even though they are not called by that name, and others that are called banks but in reality are nothing of the sort. The definition of the word *ginkō* (bank) and the functions of the institution do not necessarily match up.

A bank is a bank because it is part of the public settlement system. In other words, it is permitted to accept the deposits that serve as a means of settling a depositor's accounts with other individuals and institutions. That is why banks are given special treatment in public policy and, obviously, why they also have special obligations and responsibilities to society. In practice, however, banks tend to focus on their private business and ignore their public role. The *jusen* (housing loan company) debacle is one example. Another would be the recent widely published reports of mismanagement at other financial institutions. Regardless of what an institution is called, those involved in banking should be mindful of the ethical standards they are expected to uphold.

Nevertheless, managers and employees are likely to perceive their responsibilities differently if the institution they work for is not called a bank, however much it might function like one. The public as well tends to regard institutions differently depending on whether the word "bank" is in their name. This encourages the banking sector and the public to accept a dangerous double standard when it comes to financial institutions.

Isn't it time for Japanese financial institutions to adopt names that reflect their true roles? Any financial institution that is part of the public settlement system ought to be called a bank, and any financial institution that is not should be prohibited from using the word "bank" in its name. For example, the MOF ought to make it clear that the credit cooperatives (*shin'yō kumiai;* of which there are 369) are really banks by calling them credit-cooperative banks (*shin'yō kumiai ginkō*). Similarly, the credit departments of the agricultural cooperatives (*nōgyō kyōdō kumiai;* 2,472) ought to go by the name "agricultural-cooperative bank."

EIICHIRŌ IWASA

STREET CREDITABILITY: ***Financial institutions compete for the customer's attention in the Nihombashi business district of Tokyo.***

Article 6 of the Bank Law stipulates that only banks as defined in the law may use the word "bank" in their names. But there have been exceptions. The long-term credit banks (*chōki shin'yō ginkō;* 3) and trust banks (*shintaku ginkō;* 7) call themselves banks, so there's no reason why other financial institutions that provide settlement services shouldn't be required to use the word "bank" somewhere in their names, too.

In fact, many of these institutions do call themselves banks—in English. Both the MOF and credit unions (*shin'yō kinko;* 416) refer to credit unions as shinkin banks in their English reports. The agricultural finance institution that calls itself Norin Chuo Kinko in Japanese goes by the name the "Norin Chukin Bank" in its overseas dealings. Obviously, maintaining the stability of the public settlement system will continue to be a top priority of Japanese financial policy, and requiring institutions that do indeed hold settlement deposits to use the word "bank" in their names would make it clear to all concerned—both the institutions themselves and the people they do business with—that they are members of that system.

The Bank of Japan has recently stopped using the term "all banks" in its public reports, adopting in its place the term "domestically licensed banks" (172 financial institutions; these include the institutions formerly referred to collectively as "all banks" as well as the trust banking subsidiaries of domestic banks and foreign trust banking companies). While the term is meant to convey the idea that these 172 institutions are "banks" established in accordance with Japanese law, it still excludes the credit unions, credit cooperatives, and agricultural and fishery cooperatives (*gyōgyō kyōdō kumiai;* 1,568 as of March 1995). Perhaps, one day, all of Japan's financial institutions will have names that reflect their functions.

The author is a professor at the Osaka School of International Public Policy at Osaka University. He graduated from the Faculty of Economics at the University of Tokyo in 1963. His publications include *The Transition of Finance in Japan and the United States: A Comparative Perspective* (Hoover Institution, 1988).

JETRO

Work of great import The Japan External Trade Organization (JETRO) will offer its annual test this fall to certify qualified individuals to consult on import-related business. The consultants, known as JETRO Import Business Advisors, help to promote importing into Japan, particularly at the regional level, through JETRO-organized and privately initiated activities.

A total of 179 people have been certified under the JETRO Import Business Advisors program since it was launched two years ago. The advisors speak at import-business seminars sponsored by JETRO and attend product exhibitions to offer advice on importing.

In principle, applicants are expected to have approximately five years of experience in trading and importing. The first section of the test covers knowledge of importing procedures, import-related marketing, and trade-related English. It includes multiple-choice and essay-writing questions. The second section involves an interview and a review of the applicant's resume, with consideration given to the applicant's area of specialization, experience, and initiative.

JETRO hopes that the advisors who are certified this fall will be as successful as their predecessors in helping to boost imports into Japan. **HC**

DATA BOX
NEW PRODUCTS

Access at your fingertips Sony has developed a compact fingerprint identification unit called the FIU-001. The unit can match an individual's fingerprint or prints, together with a personal identification number entered on a separate keyboard, against a database of up to 1,000 registered prints in an almost instantaneous 0.08 seconds or less. (Previous systems required as much as three seconds to search the same sized database.) Moreover, the FIU-001 is highly reliable, with a margin of error of 0.3%. The probability of the unit mistaking one registered print for another is 0.1%. The FIU-001's compact size (42 mm x 42 mm x 92.5 mm) and light weight (110 g) make it practical for a wide range of applications, including restricting access to private residences, offices, safes, filing cabinets, and desks. The unit's list price is ¥200,000 ($1,800). For details, contact Sony's Business Development Section at (tel.) 81-3-5448-7227. **KA**

DATA BOX
BUSINESS

Raking it in Banking and broadcasting companies are the places to go for the highest salaries in Japan, according to a survey of 100 companies. The Industrial Bank of Japan and Mitsubishi Corporation topped the rankings, paying 35-year-old salarymen an average of ¥12.5 million ($113,000) a year. Fuji TV was next at ¥12.3 million ($111,000); followed by Tokyo Marine and Fire Insurance, Tokyo Mitsubishi Bank, and the Bank of Japan at ¥12 million ($108,000); and Nippon TV and Mitsui & Company at ¥11.6 million ($105,000).

Net loss Japan is being passed by on the information superhighway, according to the Ministry of Posts and Telecommunications (MPT). The U.S. leads the world with over 6 million computers hooked up to the Net, followed by Germany, the U.K., and Canada. Japan is in sixth place, with 269,000. Japanese business is also well behind the U.S. in the number of personal computers in use and in subscriptions to on-line services. MPT officials worry that the lag will hamper Japan's long-term economic growth.

Faking it The Japanese market is being flooded with counterfeit brand-name goods. In 1995, authorities seized 126,000 counterfeit items—twice as many as in the previous year. Manufacturers of the real items, meanwhile, are fighting back by placing logos in less conspicuous locations on their products and by reducing the number of branded items they sell. Counterfeiting has gotten so blatant, say some executives, that the purveyors of the fake goods openly advertise their products as phonies—and seem to have no trouble finding buyers.

EICHIRO IWASA

The cat's out of the bag.

Second-hand news Japanese customers used to be sticklers for buying only new products, but now second-hand sales of everything from homes and cars to golf clubs and computers are booming. In May 1996, used car sales rose 10% over the same month in 1995, while sales of pre-owned homes in Tokyo grew 23%. A used golf equipment store in Tokyo has been consistently racking up annual sales increases of 30% to 40%, and the ¥40-billion ($361.7 million) used computer market is growing at a 20% yearly clip. Some manufacturers worry that the second-hand trend will cut into their sales, but analysts point out that if consumers know there's a ready market for their old products, they might be more inclined to buy new things.

Big success Foreign electrical appliance manufacturers are finally making some headway in Japan, with products designed especially for the local market. And consumers seem happy to see something different. Large refrigerators are gaining popularity, thanks in part to falling prices. Foreign appliance companies are even beginning to build their strategies around Japan, which is their largest market in Asia. The work they put into developing products for sophisticated Japanese consumers, they figure, will pay off with better products for worldwide markets.

BY **CHARLES WHIPPLE**

Diamond Days

A cornfield in Iowa, a rice paddy in southern Japan. Two teams, one game, one perfect dream of baseball.

FIELD OF DREAMERS: *The Hiroshima Corns and the Dyersville, Iowa, Ghost Players—brought together by a common love for baseball and by the 1989 film* Field of Dreams.

HARUYOSHI Hori, a 43-year-old freelance essayist and advertising copywriter who lives in Hiroshima, has been dreaming of baseball fields for as long as he can remember. As a schoolboy, he idolized such Japanese heroes of the game as Shigeo Nagashima, former slugger and current manager of the Tokyo Yomiuri Giants, who is known to Japanese fans simply as "Mr. Baseball." Unfortunately for the young Hori, however, there was no baseball team at his junior or senior high school; the only chance he had to don a glove was in sandlot games with his schoolmates.

After graduating from college and starting his career, Hori realized that he missed the game and so, in the spring of 1985, he decided to form his own sandlot team. But finding a place to practice and play turned out to be a major problem. The high premium on land and the large number of amateur baseball teams in Japan make it difficult for a new club to get on the diamond. Before every practice and game, the team had to scramble to find a field. Frustration led to disinterest and the team eventually folded. In the fall of 1992, Hori tried again, but that team also failed to take off. Not long after, Hori happened to see the movie *Field of Dreams.*

The sentimental 1989 Hollywood film was a crowd pleaser in Japan (where it was released in 1990) as well as in the U.S. It tells the story of a struggling novice farmer, played by Kevin Costner, who plows under part of his crop to build a baseball field in the hopes of bringing back the legendary Shoeless Joe Jackson. One of the greatest players the game has ever known, Jackson and seven of his Chicago White Sox teammates were banned from baseball for life for allegedly fixing their 1919 World Series with the Cincinnati Reds. Though the players were acquitted by a grand jury in 1921, the ban was never lifted.

DESIGNATED BUILDERS: *Kōtarō Kodama, mayor of Takamiya, Hiroshima Prefecture (left) lent his support to Haruyoshi Hori, founder and manager of the Corns.*

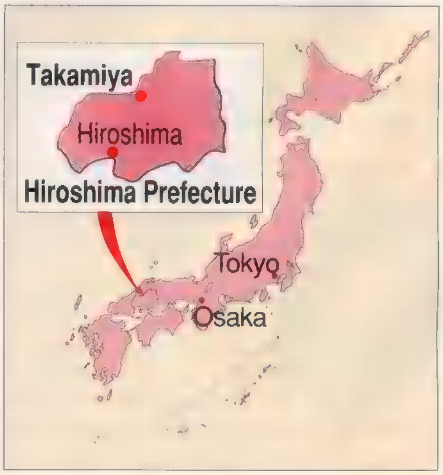
Hori loved the movie, and was struck by the parallels between his own dream and that of the main character in the film. "Though the story is obviously fiction," he explains, "the idea that a farmer could turn his cornfield into a baseball field made me think, 'Hey, we could do something like that!'"

IF YOU BUILD IT ...

In June 1993, Hori started to look for a place to build the diamond of his dreams. As luck would have it, one week into the search, a friend introduced Hori to Kazuyoshi Masuda (46) and Hiromi Okazaki (54), who were willing to lend him a 1.5-hectare rice paddy that was lying fallow. The terraced paddy was located in the small town of Takamiya (population 4,800), about 60 km from Hiroshima. Hori then formed a group, the Tōmorokoshi no Kai (The Corn Association), to build the field. The association eventually brought together 30 volunteers and included baseball fans—men and women—from all walks of life: salesmen, designers, furniture makers. Hori formed the Corns the following year with other members of the association, becoming the team's manager and third baseman.

Construction of the field began in July 1993. For more than two years, the members of the association gathered on Sundays and holidays to work on the field. Over time, the people of Takamiya began to take an interest in the project and often showed up to lend a hand. Like many depopulated farming communities in Japan, Takamiya was struggling. The mayor of the town, Kōtarō Kodama, saw Hori's efforts as an opportunity to lift the people's spirits and donated soil left over from the construction of a local road. With the assistance of an employee at a local civil engineering company, the group used that soil to tackle one of its hardest tasks—leveling the terraced field. To pay for the project, the association held a flea market, showed movies, and organized a concert by popular rock band Shang Shang Typhoon that was held to celebrate the opening. So far, the association has raised almost ¥3 million ($27,000).

On September 2, 1995, four teams—including the Corns and the Tokyo Cooperstown Fouls—gathered on the Dream Field for a three-game inaugural tournament. The official opening celebrations, which included the rock concert and an impromptu "summit" on sandlot baseball, were held the following day.



Written in numerals, September 3 can be pronounced "ku-sa" in Japanese, and the Japanese word for sandlot baseball is *kusa yakyū*, or "grass baseball." With this in mind, the Corns had determined that September 3 should henceforth be known as Sandlot Baseball Day. What more auspicious occasion, the players thought, to officially open their new field.

GO THE DISTANCE ...

The original Dream Field built for the movie is located in the small, peaceful farming town of Dyersville, Iowa (population 3,800), about 42 km from Dubuque. When filming was completed, 26 citizens of the town—many of whom had bit parts or were extras in the movie—formed a town team, which they named the Ghost Players. Members of the team read an article about the Corns and their new Dream Field in Japan in the September 13, 1995, issue of the *Washington Post*. When one of the owners of the original Dream Field heard about the story, he contacted friends in Kyushu and asked for their help in introducing the two teams. And so, on May 11, 1996, the Dyersville Ghost Players and the Hiroshima Corns came to meet on the diamond in Takamiya.

"To tell you the truth," Hori confides, "I was more than a little worried about what they would think of our Dream Field. After all, they play on the original. It really made me feel great to hear them say, 'Good job!' I got a little choked up when they all came up to shake my hand and pat me on the back before the game. It was so much more than I had hoped for."

When the last batter had been retired, the Ghost Players had won 12 to 5, but Hori was philosophical about the loss. For the Corns, he explained, the point isn't winning or losing, but simply enjoying the sport. After the game, Keith Rahe (37), the manager of the Ghost Players and groundskeeper of the original Dream Field in Dyersville, told a television reporter from Hiroshima that what he would remember most from the contest was the joy the Corns had shown in playing the game. To Hori, those words were far sweeter than victory.

ALL PHOTOS KAZUO KIRITA

STEE-RIKE! ***A Corn takes the plate on the Dream Field in Takamiya.***

Hori is now making plans to lead the Corns to the original Dream Field in Dyersville for a rematch with the Ghost Players. Maybe sometime next spring or summer, when the Iowa corn is tall, deep, and green.

BY **KUNIO NISHIMURA**
WITH **JESSE WALLIS**

Pedaling On: London to Capetown

On September 26 last year, Tatsu Sakamoto set out from London on a 70,000-kilometer bicycle trip around the world. The trip, which is scheduled to end in Mexico in December 1999, is sponsored in large part by his employer, children's clothing manufacturer MIKIHOUSE. (The first installment of this occasional series appeared in the January '96 issue of LJ.) Sakamoto, who is currently heading south through Africa, sent LOOK JAPAN a report of his experiences so far. The following is a brief summary.

AFTER four months' cycling through France and Spain, Tatsu Sakamoto landed on the African continent at the beginning of February 1996. He had planned to begin the African leg of his journey in Morocco, but the area of the Western Sahara between Morocco and Mauritania had become a landmine zone because of prolonged fighting between Moroccan forces and local militia; instead he flew from Casablanca to Nouakchott, the capital of Mauritania.

In Nouakchott, the wind blows constantly, carrying with it an endless supply of sand from the Sahara. Taking his cue from the locals, Sakamoto bought a turban to wrap around his head. Turbans prevent body moisture from being whipped away in the wind, facilitate breathing, and protect the head from the strong desert sun. Even after he left Nouakchott behind, Sakamoto reports, the sand still gusted and the desert "seemed to go on forever." The unfamiliar heat clouded his mind and sapped his strength, but Sakamoto eventually made it across the Senegal River, arriving in Senegal itself on February 17.

SAKAMOTO

Sakamoto takes a breather in the Sahara Desert.

He then headed for Dakar, the nation's capital. Having passed through the town of St. Louis, which perches on the edge of the North Atlantic Ocean, and crossed the savanna, an exhausted Sakamoto pulled up to rest on the night of February 20 in a small village roughly 200 kilometers from Dakar.

A group of curious children watched the unexpected visitor ride into their village. Sakamoto greeted them by playfully pushing his nose up to make a pig face. The children timidly returned the peculiar greeting. After repeating the process several times, the children began to dance around in excitement and before long the ice was well and truly broken. The village chief offered Sakamoto a room in his home, which for Sakamoto, who had grown accustomed to spending the cold desert nights in his tent, was a "most welcome" offer.

As Sakamoto said his good-byes the next morning (this entailed lots of nose pushing), the children jostled for attention at his elbow. When he climbed onto the bicycle, the children suddenly began to push him. The tires, instead of getting bogged in the sand as they normally did, rolled along as if they were gliding on water. For a few seconds, Sakamoto was carried along by a sea of children: "All those carefree faces! Faces and more faces!" he writes in his report. "Those huge, brightly shining eyes! Eventually I pulled away from them and, as I pedaled on, their figures diminished in the distance. I looked back again and again, and each time they were still waving. It was very moving."

Sakamoto is scheduled to arrive in Capetown, South Africa, in December. **HC**

FACTS OF LIFE

A Catalog of Consuming Desires

The strong yen, high prices at home, and an appetite for foreign goods have many Japanese consumers turned on to mail-order shopping.

BY **IZUMI MIYACHI**

IN the past few years, the term *kojin yunyū*, or "personal importing," has become something of a household word in Japan. It refers to the purchasing of foreign goods through mail-order catalogs. Two years ago, when the yen broke the ¥100=$1 barrier and settled temporarily in the ¥90 range, Japanese consumers began to show a marked interest in personal importing. Although the yen has lost a bit of ground since then, people are still looking abroad for good deals.

The trend has been documented by the Manufactured Imports Promotion Organization, which is affiliated with the Ministry of International Trade and Industry. The organization makes available to consumers over 1,500 catalogs that it has gathered from around the world. It also assists consumers in placing orders and in returning damaged or unwanted merchandise. Between April 1995 and March 1996, over 40,000 people visited the organization's headquarters in Tokyo.

In recent years, Japanese women's magazines have been running special features on overseas mail-order companies in virtually every issue. Two years ago, the focus was on catalogs for popular outdoor-goods manufacturers like L. L. Bean and Eddie Bauer, who were already well known in Japan. Since then, the number and variety of catalogs have expanded dramatically, and all kinds of specialized catalogs continue to be introduced.

Women's magazines, as well as books devoted to personal importing, have made catalog shopping easier for people who have no confidence in their English ability or who don't know how to order. Some of these publications even include order forms that can be used to request catalogs from overseas. As a result of this trend, foreign goods that once seemed unattainable to the average consumer are suddenly quite accessible.

The first personal importing boom occurred between 1986 and 1987. At that time, the most popular items were high-class, brand-name goods that were already available in Japan, but at far higher prices than abroad. The second boom, which is still underway, has a different focus: everyday consumer goods such as kitchen utensils, natural cosmetics, and baby clothes made from organic cotton.

THE NEW YUNYŪ: *More than 60,000 consumers browsed through catalogs at the International Personal Importing Fair held in Tokyo in March 1996.*

People are attracted to personal importing for a number of reasons. The primary motivation is economic, stemming from the fact that Japanese retail prices remain relatively high. According to a 1995 survey by the Manufactured Imports Promotion Organization, 77% of respondents who had ordered goods directly from abroad said that they started to buy through catalogs because it was cheaper than purchasing imported goods at Japanese stores.

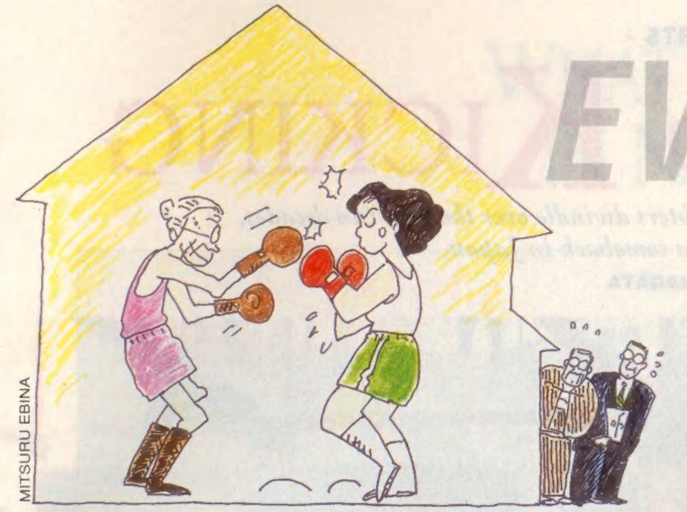
For a long time now, consumers have had a vague impression that imported goods are expensive in Japan, but until recently the only way they could actually compare prices was to travel abroad themselves. Now, through the catalogs, people have a general idea how much things cost in their original markets. Personal importing has not only opened consumers' eyes to Japan's high prices, but has also made it possible for them to conceptualize a "reasonable" price. By comparing prices listed in several catalogs, they've gradually developed a sense of what a given item ought to cost. Many consumers have begun to ask why there's such a huge price gap between Japanese and foreign goods, and why they must pay so much more when they buy imported goods through a retail outlet in Japan.

Personal importing has also been boosted by changes in the Japanese lifestyle. Japanese are now placing greater emphasis on their lives outside of the workplace. Home gardening, interior decorating, outdoor activities such as camping and hiking, and other leisure pursuits are experiencing a boom, and people often discover that they can find a wider variety of inexpensive, well-designed goods for these activities if they look abroad.

Catalogs from overseas are full of items with designs that simply can't be found in Japan. Among household goods, for example, are simple yet elegant bed linens; plain, strong towels; and children's clothing that is both durable and well designed. On page after page, the consumer finds goods that spark a desire which is almost impossible to satisfy in Japan. Personal importing will no doubt make it possible for many Japanese to find new ways to enjoy their lives.

The author is a staff writer at the *Yomiuri shimbun*.

EVERYDAY CONCERNS



ALL IN THE FAMILY

✉ *I'm a 35-year-old housewife, and I'm writing about the prospect of living with my parents-in-law, both of whom are in their seventies. My husband and I live in the Tokyo area—he works in the city—but they don't. Lately, they've been dropping hints about wanting us to move in with them, mentioning things like how hard it is to keep up with the housework at their age.*

Although I understand that my husband's parents are getting old, in my heart I really don't want to live with them. My mother-in-law can be very meddlesome and often calls with advice on how to stretch the household budget, or even on how to get the creases of my husband's trousers just so. If we live together, I'm sure she'll start in with her views about our children's education.

My husband has suggested buying a house close to his parents, or converting his parents' home into a two-generation duplex. Either way, I would feel petty and small if I refused to live with them. Should I grin and bear it?

Woman, Kanagawa Prefecture

✍ Your letter clearly conveys your mixed feelings: objectively, you feel that moving in with your elderly in-laws is the right thing to do; subjectively, however, you want to avoid it at all costs. Your husband probably understands your true feelings, which is why he hasn't insisted on living with them and has instead suggested buying a separate house or converting the family home into a duplex.

In view of the concerns you've expressed, living together can only bring trouble. Unless there's a drastic change in the way you feel, there's no way such an arrangement would be desirable. In this case, the easiest course would be to buy a house a short distance from your parents-in-law so that you can visit them from time to time and look after them.

As I write this, I imagine you breathing a deep sigh of relief. I can't help wondering, though, how you'll handle such problems as your husband's commute to Tokyo and finding the money needed to buy a new house. It may be none of my business, but those aspects do seem worrisome.

Saeko Saegusa, social critic

REBEL, REBEL

✉ *I'm a 40-year-old housewife. My eldest daughter managed to enroll in the high school of her choice and she's now a sophomore. Around November of her first year, she began staying out late with friends from her junior high school days. Since then her grades have slipped, she's often tardy, and she's been skipping school quite often.*

At first I scolded her relentlessly, but this only made her stay out late more often. I eventually wore myself out and stopped saying anything at all. At this point, I wouldn't be surprised if she flunked out. Our daughter says if she doesn't pass to the next grade she'll just quit high school, get a job, and enroll in a beauty school. Even if she does pass, I'm inclined to let her do as she pleases rather than let things go on as they are. What do you think?

Woman, Saga Prefecture

✍ As with all things in life, your problem has a cause. It seems to me that you should calmly seek out the cause before trying to address the symptoms.

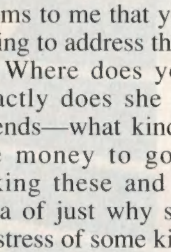
Where does your daughter go late at night, and what exactly does she do? You mentioned her old junior high friends—what kind of people are they? Where does she get the money to go out at night? I suggest you start by asking these and other questions until you get a clearer idea of just why she's acting this way. I suspect loneliness or stress of some kind are responsible, but you can't expect her to come out and say so openly.

If you're still baffled, it's possible that the problem has something to do with her school life. I suggest you contact her homeroom teacher and discuss the matter. I know you're already worn out, but it would also be a good idea to talk things over thoroughly with your husband. It's your responsibility as parents to unravel the twisted threads in your child's life—after all, only your love can help her.

Katsumoto Saotome, novelist

NOTE: The questions and responses featured in this series are taken from the *Yomiuri shimbun*'s daily *Jinsei annai* (Life guide) column.

OCTOBER 1996



PREVIEW

NGOs A–Z

Japan's nongovernmental organizations are growing in number and influence. What's behind their success? And what do the people who run them hope to achieve?

FOUND IN TRANSLATION

More and more contemporary Japanese fiction is being translated into foreign languages. Why are people overseas taking a shine to these works now?

SUMMIT SUM-UP

An overview of the G-7's Lyons Summit, examining member nations' contributions to developing countries and Japan's role in the group.

CHECKERED FUTURE

Twenty-two-year-old racer Toranosuke Takagi, Japan's Formula 3000 whiz kid, is gearing up for F-1 glory.

And much more in the next issue of *LOOK JAPAN*

ALIVE AND KICKING

After seeing its base of local fans and fighters dwindle over the past two decades, kick boxing is making a comeback in Japan.

BY **MIHO NAGATA**

IT took some hard knocks in Bangkok to make a fighter out of Keita Kainuma. In 1992, the now 29-year-old native of Nagoya, Aichi Prefecture, made his first visit to the Thai capital, where he lived and practiced at a local kick boxing gym for one month. "My entire life revolved around practice," Kainuma recalls. "The local boxers were so good, a 15-year-old could easily knock me down. I realized I could never beat the Thais unless I really got serious."

Until then, Kainuma's professional record in Japan over three years had been lackluster: one win, two draws, and three losses. He remembers how the owner of his gym in Japan tried many times to persuade him that he would never make the grade as a professional and should quit. But Kainuma was not to be so easily discouraged. Since that first visit, he has returned to Thailand four times to train and compete in matches.

Today Kainuma is ranked second nationwide in the bantamweight division of the All Japan Kick Boxing Federation, the largest national organization overseeing the sport. He supports himself by managing the kick boxing department at his gym. When he's preparing for a match, however, he takes a month off to concentrate on practice. "I run in the morning, and work with the punching bag and shadowbox from afternoon to night," Kainuma says of his training.

With a paying job related to kick boxing and the flexibility to practice whenever he likes, Kainuma is one of the luckier fighters in Japan. Though the country boasts about 3,000 kick boxers—including students and gym instructors as well as the professionals who belong to Japan's four major kick boxing organizations—only a handful make a living from the sport. Consequently, almost all Japanese fighters must practice at night after working full- or part-time day jobs.

Naoki Yasuoka (26), better known by his ring name, Wonderman Muroto, debuted in the flyweight division of the Martial Arts Japan Kick Boxing Association in 1989 and has since become association champion at three different weights. Despite his success, Muroto wanted to train with stronger fighters, so in 1994 he set himself up in an apartment in Bangkok and started working out at a local gym.

THWACK! *Wonderman Muroto lands a left during sparring practice at his gym in Bangkok.*

Muroto does not speak fondly of his early experiences there. It seems that many Japanese fighters like him had come to Thailand for training, but they were not taken seriously by the local coaches. "The Japanese fighters were too weak even to get practice matches with the Thais," Muroto explains. "We were either patronized or just written off entirely, and the enthusiasm that had taken us all the way there was wasted."

But rather than give up, Muroto opened a gym of his own in Bangkok in August 1995, with financial help from his parents and from the owner of his gym back in Japan. He now lives and practices at the gym with eight Japanese and ten Thais, including students and instructors.

SPLIT DECISION

According to the All Japan Kick Boxing Federation, attendance at kick boxing events has been rising substantially over the past two years, boosted in large part by the popularity of women's matches. "Five years ago, we could expect to see a few middle-aged drunks in the stands. Now we're seeing a lot more spectators *and* boxers," says Naoko Kumagai (25), the first woman kick boxer in Japan and now the women's flyweight champion of the world.

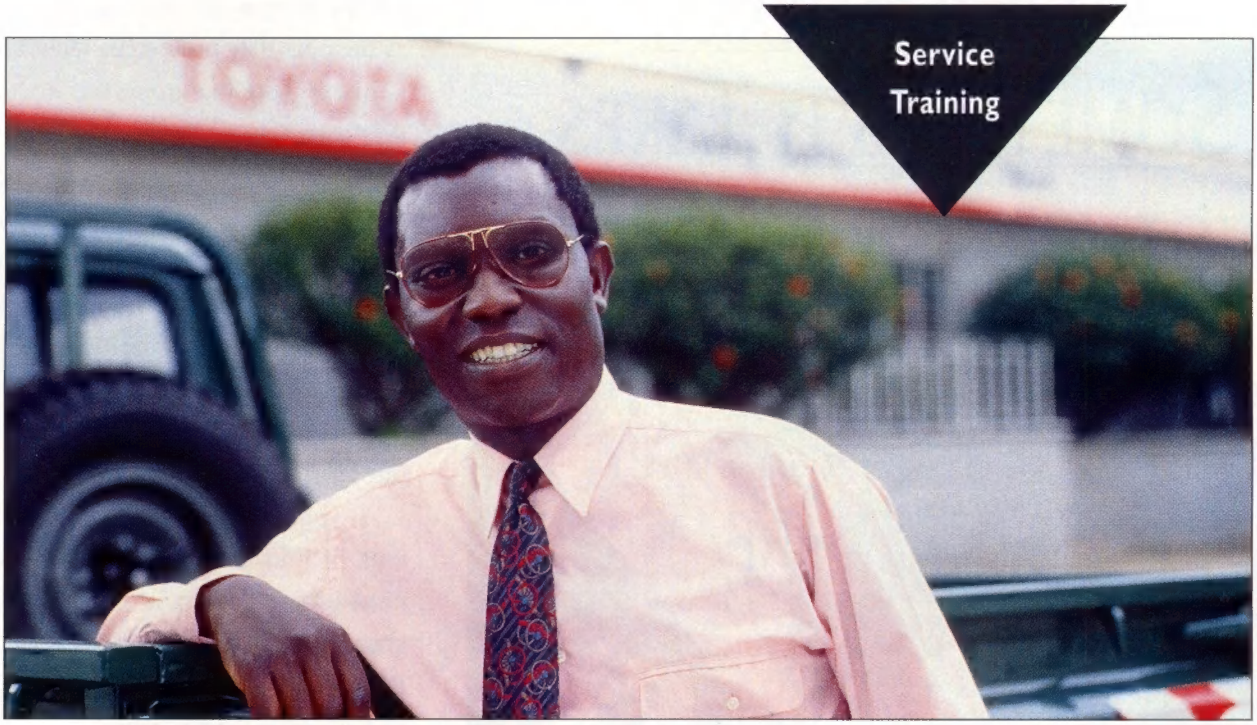
Still, enthusiasm for the sport in general is nowhere near as high as when kick boxing was introduced to Japan in the late 1960s. The Japanese public got hooked on the sport after a 1966 demonstration match between Japanese karate and Thai kick boxing fighters. When interest in the sport was at its peak, match broadcasts sometimes topped 40% in the ratings. The first boom reached its climax in 1978 when, for the first time, a Japanese fighter—Toshio Fujiwara—was able to beat a Thai champion. After that, however, public enthusiasm began to wane.

Despite the recent revival of the sport's popularity in Japan, many observers doubt whether the current boom will equal, let alone surpass, the first. Says an editor at Fukushodo, a martial-arts publishing house, "During the first boom, many Japanese fighters were talented enough to beat their Thai opponents. Now Japanese fighters are way behind. Kick boxing will never be a major sport here until we start seeing world-class matches at home."

The fighters themselves are more optimistic. "In Thailand, kick boxing has a 500-year history, but in Japan its only been around for about 30 years," Wonderman Muroto reasons. "If Japanese fighters keep practicing with Thais, we'll catch up."

The author is a staff writer at the *Nihon keizai shimbun*.

WHAT'S TOYOTA DOING IN NAIROBI, KENYA?



This bustling, dynamic metropolis is home to Toyota's new Kenyan Training Center, where service technicians from across Africa come to learn about the newest advances in automotive service technology. Timothy Odhiambo, Workshop Manager here, takes care of logistic support for the visiting trainees. He tells us, "I enjoy meeting people from different backgrounds and different parts of the continent. Plus being able to work with the latest technology—it makes me feel that I'm on top of things."

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